SUPPLEMENTAL

INSTRUCTION MANUAL

FOR THE

WJ-8617B-26 RECEIVER

INTRODUCTION

The WJ-8617B-26 Receiver is a modified version of the WJ-8617B(S1) Receiver. The tuning range of this receiver expands down to 10 kHz using a Type 716005-1 VLF Converter. Up to ten selectable IF bandwidths are provided.

WJ WATKINS-JOHNSON

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GAITHERSBURG, MARYLAND 20878

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WJ-8617B-26 RECEIVER

WARNING

This equipment uses voltages which are potentially dangerous and may be fatal if contacted. Exercise extreme caution when working with the equipment when any protective cover has been removed.

PROPRIETARY STATEMENT

This document and subject matter disclosed herein are proprietary items to which Watkins-Johnson Company retains the exclusive right of dissemination, reproduction, manufacture and sale.

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1.1 ELECTRICAL DESCRIPTION

The WJ-8617B-26 Receiver is a modified version of the WJ-8617B Receiver with an extended tuning range down to 10 kHz. Like the WJ-8617B, the WJ-8617B-26 can provide up to ten selectable IF bandwidths. The choice of selectable IF bandwidths is provided in the WJ-8617B Instruction Manual. However, the IF bandwidth options for the WJ-8617B-26 differ slightly. The WJ-8617B-26 receiver can be configured to provide an otherwise unavailable 6 MHz IF bandwidth. To accommodate the inclusion of the 6 MHz IF bandwidth, the standard 10 MHz IF bandwidth option is not made available and a bandwidth code formerly assigned to the 10 MHz IF bandwidth is reassigned to the 6 MHz IF bandwidth.

The microprocessor determines what IF Bandwidth Amplifier is installed in the system by decoding an analog tuning voltage. **Table 2-3** of the WJ-8617B manual provides the key to this decoding process. When the WJ-8617B-26 senses 9.5 V in an IF Bandwidth Amplifier slot, instead of interpreting that this voltage indicates the presence of a 10 MHz IF Bandwidth Amplifier, it interprets it to mean that a 6 MHz IF Bandwidth Amplifier is installed in the slot.

A VLF Converter (A3A2) and a 32.1 MHz Reference Generator (A3A22) provide receiver tuning down to 10 kHz. The entire frequency band of 10 kHz to 5.9999 MHz is up-converted to a frequency band of 32.1100 MHz to 38.0999 MHz. The up-converting of the frequency band is accomplished by mixing the incoming RF and the fixed LO signals to produce a summing frequency. Selectable IF bandwidths are supported through switchable IF Bandwidth Amplifiers (A3A9), and switchable FM Demodulators A3A17 through A3A21 (each accommodating two bandwidths). Frequency reversal does not take place in the conversion process.

1.1.1 SPECIFICATIONS

All specifications given in the WJ-8617B manual also apply to the WJ-8617B-26, except for the items given in **Table 1-1** at frequencies below 7 MHz.

Table 1-1. WJ-8617B-26 Departures from WJ-8617B Specifications (Frequencies Below 7 MHz)

Item	Specification
Noise Figure (Freq. Below 7 MHz)	15 dB
3rd Order Intercept	0 dBm

1.2 MECHANICAL DESCRIPTION

Several mechanical modifications, such as the new Antenna Input Assembly (A8) and the new VLF Converter (A3A2), are related to the extension of the frequency range. Refer to **paragraph 1.4** for the respective circuit descriptions.

The ANT 1 connector on the rear panel is provided for the frequency range of 10 kHz to 5.9999 MHz. Rear panel connector ANT 2 is used only for the frequency range of 6 MHz to 500 MHz. Automatic antenna switching on the Synthesizer assembly (A5A2), which

occurs in the standard WJ-8617B, does not occur in the WJ-8617B-26 Receiver. Antenna Filter Assembly (A8A1) contains separate filter paths for Antenna 1 and Antenna 2.

1.3 OPERATION

The WJ-8617B-26 Receiver operates in much the same manner as that of the WJ-8617B Receiver. The operation of the WJ-8617B-26 differs, however, due to the replacement of the Type 794128-1 Antenna Switch with the Type 794165-2 Antenna Input Filter.

ANT 1 is used for signals in the 10 kHz to 5.9999 MHz range, while ANT 2 is used for RF signals in the 6 to 500 MHz range. Antenna switching is automatic through the VLF Converter (A3A2), with the tuning of the receiver. Therefore, the following features of the WJ-8617B are not operative:

1. Antenna select dip-switch (A5A2S1)
2. Programmable Antenna Selection (PAS) mode.
3. ANT 2 select pushbutton
4. Built-in Test (BITE) function

1.4 CIRCUIT DESCRIPTION

The circuit descriptions which follow identify subassemblies within the WJ-8617B-26 Receiver that differ from those of the described in **Section III** of the WJ-8617B(S1) Instruction Manual.

1.4.1 ANTENNA INPUT FILTER ASSEMBLY (A8)

The schematic diagram for the Antenna Input Filter is shown in **Figure 1-8.** The Type 794165-2 Antenna Input Filter Assembly contains two antenna filter paths. One filter is used for the .01 to 5.9999 MHz signals from antenna 1. This signal passes through a high-pass filter consisting of C4 and C5 and is output at J4.

Antenna 2 receives signals in the range of 6-to-500 MHz, which enter the antenna Input Filter at J1 and pass through a low-pass filter Inductors L1 and L2 and bypass capacitors C1, C2 and C3 make up this filter. The 6-to-500 MHz signal is output at J3.

Outputs from each of the RF filters connect to the appropriate input of the VLF Converter, A3A2.

Note that no alignment of the RF filters is required.

1.4.2 TYPE 794095-2, VHF LOW-BAND PRESELECTOR (A3A4)

The Type 794095-2 VHF Low-Band Preselector provides RF preselection for a frequency range from 2 to 120 MHz. The Preselector is the same as the 794085-1 Preselector, except that Band 1 covers the range of 2 to 30 MHz. The schematic diagram for the Type 794095-2 VHF Low-Band Preselector is shown in **Figure 1-3.**

1.4.3 TYPE 716005-1 VLF CONVERTER (A3A2)

The Type 716005-1 VLF Converter subassembly (A3A2) schematic diagram is shown in **Figure 1-2.** Refer to **Figure 1-2** for the following discussion.

RF signals within the range of 0.01 to 5.9999 MHz are connected to Part 280607 Preselector (A3A2A1A1) from the ANT 1 connector, J1. This filter network is a 7th order, low-pass filter with an elliptical response. The roll-off point is 8 MHz, with an insertion loss of about 0.2 dB.

The resultant preselected RF signal connects to a high-level double-balanced mixer, U1, within the Part 280608-1 Mixer subassembly (A3A2A1A2). The 32.1 MHz Reference Assembly (A3A22) provides a 32.1 LO input signal to connector J2. This signal is amplified by broadband amplifier U2. The output of U2 is connected to broadband amplifier U3 through an attenuator comprised of resistors R44, R5 and R6. This network, with coupling capacitors C4 and C6, provides reverse isolation for the broadband amplifiers. Inductors L1 and L2 are RF chokes for the +5 V supply potential. The gain of U2 and U3 are each approximately 17 dB. The U3 output is connected to pin 8 of mixer U1. A sample of the LO frequency is processed by an amplitude and phase shift network, consisting of potentiometers R1 and R2, resistor R3 and phase-shifting capacitor C1. Potentiometer R1 provides the phase-shift adjustment, while R2 provides the amplitude adjustment. The shifting the phase of the LO frequency impacts the phase of the IF output of mixer U1.

The IF output is connected to Part 280609, IF Amplifier subassembly (A3A2A1A3) via the 3-pole bandpass filter network. Response of this filter network is 31.00 to 40.00 MHz, which is amplified by U1 which provides approximately 8.5 dB of gain. The noise figure of amplifier U1 is 2 dB.

The VLF/VHF* line from the Digital I/O Motherboard determines what frequency is output to connector J4. A logic "1" at connector pin 57 causes PIN diodes CR1 and CR3 to be forward-biased and PIN diodes CR2 and CR4 to be reverse-biased by the outputs of differential amplifiers U1B and U1A, respectively. This allows VLF frequencies of 0.01 through 5.9999 MHz to be passed to connector J4. A logic "0" at connector pin 57 causes the opposite condition. With PIN diodes CR1 and CR3 being reverse biased and diodes CR2 and CR4 being forward biased, frequencies of 6 to 500 MHz from ANT 2 connector J3 are applied at connector J4. The total gain of this subassembly is -1 dB, nominal. Due to ripple characteristics induced in the IF Amplifier subassembly (A3A2A1A3) however, the overall gain may be ±1 dB.

1.4.4 Type 726015-1 AM DEMODULATOR/IF OUTPUT AMPLIFIER (A3A16)

The Type 726015-1 AM Demodulator/IF Output Amplifier (A3A16) schematic diagram is **Figure 1-5.**

The incoming signal from the selected 21.4 MHz IF Amplifier is connected to the AM Demodulator/IF Output Amplifier, through the input switching network comprised of PIN switching diodes CR1 through CR5 and associated bias resistors R1 through R6. This input switching network provides a signal path for the output of the active 21.4 MHz IF Amplifier to enter the AM Demodulator subassembly. The paths from the inactive subassemblies are turned off to prevent any interaction between these inactive output stages and the signal path. Switching of this input network is controlled by the IF select outputs of the AGC Amplifier subassembly A3A8. Application of +15 Vdc at the BW SEL input corresponding to the selected IF amplifier provides switching. This forward biases the series PIN diode in the signal path to cause

it to function as a closed switch, permitting the incoming signal to pass. The signal entering the subassembly is then applied through capacitor C6 to Signal Splitter U1. The IF signal is split between transformer T5 for IF amplification and transformer T4 for LOG VIDEO amplification.

The signal passing through transformer T5 is connected to gate 1 (pin 3) of dual gate FET transistor Q1. Bias for gate 1 is provided by resistors R26 and R27. Bias for gate 2 (pin 2) is provided by the divider formed by resistors R28, R29 and R30, and the AGC input at connector pin 53. This bias network permits the AGC input voltage to provide 40 dB of control over the IF output signal level. With no AGC voltage present at pin 53, the circuit operates at maximum gain. When the AGC input voltage begins to go negative, with an increase in signal strength, the negative voltage at the anode of CR6 causes the diode to become reverse biased. With CR6 cut off, the bias for Q1 is developed by the voltage divider mentioned above. The output of Q1 is developed across the 21.4 MHz tank circuit formed by L7 and C30. The output is coupled through C33 and C34 to the input of amplifier U15. The adjustment of R34 controls the signal level that is decoupled by C34, thus controlling the overall gain of this circuit. Zener diode VR1 drops a constant 8.2 volts to provide U15 with a 6.8 Vdc supply. The U15 output is split by U7 into two components: a switched video IF component and a video demodulation component.

The 21.4 MHz Switched IF Output is amplified by U16. One output of Signal Splitter U7 connects to attenuator network R22, R23 and R24. The attenuator provides reverse isolation for Amplifier U16. L5 is an RF choke for the +5 V supply.

The path of the 21.4 MHz IF signal to be demodulated is dependent on the selected IF bandwidth. When a bandwidth of 250 kHz or greater is selected, a +5 volt level is present at SEL connector pin 41, causing a low output at pin 6 of Operational Amplifier U17. CR10 and CR11 are forward-biased to provide a signal path through Signal Splitter U8. When an IF bandwidth of 100 kHz or less is selected, the AGC Amplifier (A3A8) places +0 Vdc at connector pin 41. The +15 Vdc supplied by pin 6 of U17 causes diodes CR8 and CR9 to conduct, providing a signal path through the 200 kHz bandpass filter, comprised of T1, T2 and C50 through C54. The 200 kHz Post-Filter limits the bandpass to reduce broadband noise when narrow-band IF bandwidths are selected.

From the post-filter circuitry, the 21.4 MHz IF is routed to Signal Splitter U8. From U8, one of the signals is output to the FM Demodulators (A3A17 through A3A21). The second output of U8 is amplified by U10, U11 and U12, and combined with the BFO input signal by U13. (When the CW mode is selected, the Synthesizer provides a 21.4 MHz Beat Frequency Oscillator signal at connector P1, pin 8. The BFO signal and the IF zero beat to produce an audible output tone.) The output of U13 is developed across the primary of T3 and coupled to the AM detector in the secondary. Capacitor C70, across the secondary of the transformer, tunes the secondary to 21.4 MHz. The AM detector (CR12 and CR13) use C59, C60 and L12 to remove the 21.4 MHz RF component from the signal and passes the video signal. The output of the AM detector is buffered by unity gain amplifier U9 to the AGC amplifier, through connector P1, pin 3. The video signal is also routed to the FM Demodulators for final filtering, via pin 5 of P1. The voltage divider network containing R47, R48 and R49 provide a method of offset correction at the pin 5 output.

The 21.4 MHz IF signal from transformer T4 is coupled through C8 to the LOG VIDEO Amplifier, comprised of input driver U2, LOG VIDEO Amplifiers U3 through U5, and voltage amplifier U6. This circuit provides a DC output voltage that increases logarithmically from 0.4 Vdc at the noise level to 5.0 Vdc at levels 40 dB above the noise level. The 21.4 MHz input signal, coupled through C8, is applied to the input of U2, where it is amplified to drive the LOG amplifiers. The output signal is developed across R9 and potentiometer R7. The signal,

taken from the wiper of R8, is coupled through C10 to U3, U4 and U5. Each of these amplifiers provide about 13 dB of gain and are cascaded, providing an total gain of 40 dB. Pin 4 of each amplifier provides a DC bias current which varies logarithmically with the resistors R10 through R12, and then provided to U6 for voltage amplification. The summing network components, along with feedback resistors R14 and R16, set the gain of U6. From pin 6 of U6, the output is connected through R17 to pin 20 of P1, providing the LOG VIDEO output to the required circuits.

1.4.5 TYPE 776007-1 32.1 MHz SYNTHESIZER (A3A22)

Refer to **Figure 1-6** for the Type 776007-1 32.1 MHz Synthesizer subassembly schematic diagram.

The 32.1 MHz Synthesizer assembly (A3A22) provides a 32.1 MHz LO signal to the VLF Converter assembly (A3A2). The Part 380450-1 Digital subassembly (A3A22A1) divides the 1 MHz signal from the Synthesizer Motherboard (A4) by 10 and divides the 32.1 MHz signal from the Oscillator Buffer subassembly (A3A22A2) by 321. The two 100 kHz signals are phase-detected to provide a DC tuning voltage proportional to the phase difference of the 1 MHz reference and 32.1 MHz signal.

The 1 MHz reference enters the Digital Subassembly via connector J3, and is connected to divider U2, which divides the frequency by 10. The resulting 100 kHz output at U2 pin 12, is routed to phase detector U1. A sample of the 32.1 MHz signal from the Oscillator Buffer is divided by 321, by a network consisting of integrated circuits U3, U4 and U5. The 100 kHz signal which results, is connected to phase detector U1, which outputs a DC voltage that is proportional to the phase difference of the 1 MHz reference and the 32.1 MHz signal.

The Oscillator Buffer subassembly provides both the 32.1 MHz oscillator circuitry and the necessary driver circuitry for this subassembly. Tuning voltage derived from the phase detector is routed to the Oscillator Buffer subassembly. From there the phase voltage is applied to 32.1 MHz crystal oscillator Y1 and varactor diode CR1 in order to synchronize its output signal with the 1 MHz reference signal. A sample of the 32.1 MHz oscillator signal is re-routed via TTL driver Q3 to the aforementioned phase detectors to close the loop.

The 32.1 MHz signal is routed through a bandpass filter comprising C16, C17, C18, C22, C23, L6 and L7. The signal is then fed to a splitting network of resistors R9, R10 and R11. One of the outputs from the splitter furnishes a signal to broadband amplifier U1, which provides 13 dB of gain for a 0 dBm output at J1, when switched "ON" by a high VLF/VHF* signal. The other path from the splitter is to broadband amplifiers U2 and U3, which provide a minimum output level at connector J2 of -10 dBm (after passing through the attenuator formed by resistors R19, R20, and R21).

Selection of the VLF tuning range is made via the VLF/VHF* signal, which enters the 32.1 MHz Synthesizer module through filter FL2. When the VLF Converter is selected this signal is a logic HIGH. The "HIGH" is connected to complementary operational amplifiers U4A and U4B. The "HIGH" causes the output of U4A to go HIGH and the output of U4B to go LOW. The logic "LOW" causes CR3 to be reverse-biased. At the same time, the HIGH (from U4A), connected through isolation inductance L12, forward biases CR2. This allows the 32.1 MHz signal to pass through CR2 and attenuator network R24, R25 and R26, to J1.

*Indicates Active Logic Level "LOW"

When the VLF/VHF* signal is LOW, the output of U4A goes "LOW", reverse biasing CR2. The output of U4B goes "HIGH", forward biasing CR3. Thus, the 32.1 MHz LO signal is removed from the output of J1 when VHF signals are selected from the receiver.

1.5 PERFORMANCE TESTS

The test procedures provided here may be utilized for periodic performance testing as an aid in troubleshooting, or as a performance test after repairs have been made. These procedures should be executed only by skilled technicians utilizing the equipment, listed in **Table 4-1** of the WJ-8617B(S1) Instruction Manual, or their equivalents.

1.5.1 VLF CONVERTER (A3A2) PERFORMANCE TESTS

1. Connect the output of the HP-8640B Signal Generator to the ANT 1 connector on the receiver rear panel. Connect the RF millivoltmeter to the RF OUT (J4) connector on the VLF Converter assembly.

2. Set the receiver to the standard test setting described in Table 4-3 of the WJ-8617B(S1) Instruction Manual, except tune the receiver to 6.0000 MHz.

3. Inject a 6.0000 MHz CW signal to the ANT 1 at a -30 dBm level.

4. The millivoltmeter should indicate a level of -31 dBm ±1 dB at J4. The frequency at J4 should be 38.1 MHz.

5. Connect the signal generator to the ANT 2 connector on the rear panel.

6. Manually tune the signal generator from 20 to 500 MHz at a level of -30 dBm. The level indicated on the millivoltmeter should be at least -32 dBm.

1.5.2 VHF LOW-BAND PRESELECTOR (A3A4) PERFORMANCE TESTS

The performance tests for the Type 794095-2 VHF Low-Band Preselector are identical to those tests Type 794095-1 outlined in the WJ-8617(S1) Instruction Manual with the exception for those differences identified below:

1. Tune the receiver to 2.2000 MHz rather than the 22.0000 MHz cited in **paragraph 4.6.2.9.**

2. Differences in **Table 4-6** are shown in **Table 1-2.**

*Indicates Active Logic Level "LOW"

Table 1-2. RF Preselector Passband

Center Freq. (MHz)	Lower Freq. (MHz)	Upper Freq. (MHz)	Upper Freq. ÷2 (MHz)	Lower Freq. ×2 (MHz)
14.0	2.0	30	15	4.0

1.5.3 AM DEMODULATOR/IF OUTPUT AMPLIFIER (A3A16) PERFORMANCE TESTS

The performance tests for the Type 726015-1 AM Demodulator/IF Output Amplifier are identical to those for the Type 724016-1, outlined in the WJ-8617B(S1) Instruction Manual.

1.5.4 32.1 MHz SYNTHESIZER (A3A22) PERFORMANCE TESTS

1. Set the receiver to the standard test setting described in **Table 4-3** of the WJ-8617B(S1) Instruction Manual, with the exception of tuning the receiver to 6.0000 MHz.

NOTE

Receiver should be warmed-up for a period of 30 minutes prior to this test to ensure proper synthesizer setting.

2. Measure output power at module connector J1 with the power meter. The level should be -3 dBm, minimum.

3. Measure output power at module connector J3 with the power meter. The level should be -13 dBm, minimum.

4. Connect the frequency counter to module connector J1. The indicated frequency should read 32.1000 MHz ±3.2 Hz.

1.6 ALIGNMENT PROCEDURES

The alignment procedures that follow should not be performed on a routine basis. These procedures should be utilized after repairs have been made or as a touch-up alignment when a subassembly is replaced. Only after it is determined that alignment is necessary should any adjustment be made.

1.6.1 VLF CONVERTER (A3A2) ALIGNMENT

1. Connect the tracking generator to the ANT 1 connector on the receiver rear panel. Remove the jumper at pin E2 of the Preselector subassembly. Tune the receiver below 7 MHz.

2. Adjust the tracking generator to sweep from 10 kHz to 10 MHz at a 0 dBm level.

3. Connect the spectrum analyzer to pin E2.

4. Adjust L1, L2, and L3 for flattest response. The level at 8 MHz should be 3 dB down and the notch should be at 10.7 MHz. The loss of this subassembly should not exceed 1.5 dB.

5. Reconnect JW1.

6. Adjust the tracking generator to a level of -20 dBm with a sweep speed less than or equal to 0.1 sec.

7. Connect the spectrum analyzer to module connect J4. Set the center frequency of the spectrum analyzer to 35 MHz, scan width 10 MHz and a sweep speed of 8 sec.

8. At the 35 MHz center frequency, the 3 dB down points are 40 ±4 MHz and 31 ±3.1 MHz.

9. Adjust A3L1 and A3L5 for minimum loss and proper 3 dB points. The ripple of the bandpass filter should be ±1 dB peak-to-peak. Overall module gain should be 0 dB ±2 dB.

1.6.2 VLF LOW-BAND PRESELECTOR (A3A4) ALIGNMENT

Alignment procedures for the Type 794095-3 VHF Low-Band Preselector are identical to those of the Type 794095-1, outlined in the WJ-8617B Instruction Manual, with the exception of information provided in **Table 4-13.** Differences in this table are identified in **Table 1-3.**

Table 1-3. VHF Low-Band Preselector Alignment Data

Preselector Under Test (MHz)	Preselector Center Freq. (MHz)	Tuning Components
2-30	14	L5 through L9

1.6.3 AM DEMODULATOR/IF OUTPUT AMPLIFIER (A3A16) ALIGNMENT

Alignment procedures for the Type 726015-1 AM Demodulator/IF Output Alignment are identical to those of the Type 724016-1, outlined in the WJ-8617B Instruction Manual, with the exception of those steps listed below:

1. Adjust C30 and C70 for the best wideband response, centered at 21.4 MHz. The oscilloscope response should be centered at 21.4 MHz, with a 1 dB bandwidth of 4 MHz minimum. See **Figure 4-21** in the WJ-8617B Instruction Manual.

2. Adjust C51 and C53 for the best response. The response should be centered at 21.4 MHz with a 1 dB bandwidth of between 200 and 400 kHz. See **Figure 4-22** in the WJ-8617B Instruction Manual.

3. Adjust R34 for a +100 Vdc indication on the DVM.

4. Adjust R8, R10, and R14 to midrange.

5. Remove the 21.4 MHz input signal from the board and adjust R10 to produce a +0.4 Vdc indication on the DVM.

6. Set the attenuator for 36 dB of attenuation. Adjust R14 for a +5.4 Vdc indication on the DVM.

1.6.4 32.1 MHz SYNTHESIZER (A3A22), ALIGNMENT

1. Tune the receiver below 7 MHz.

2. Connect the power meter to module connector J1. Adjust L6 and L7 for maximum power output. This level should be -3 dBm minimum.

3. Connect the power meter to module connector J2. Adjust L6 and L7 for maximum power output. This level should be -13 dBm, minimum.

4. Remove the cover of the A3A22A1 subassembly. Measure the DC voltage at pin E1. This level should be 2.2 Vdc ±.25 V.

5. Adjust L1 to obtain 2.2 ±.25 Vdc.

6. With the power meter connected to module connector J1, tune the receiver above 10 MHz. The level should be below -50 dBm.

1.7 REPLACEMENT PARTS LIST

The following parts list reflect modules and components which are unique to the WJ-8617B-26 Receiver. New modules are listed in their entirety. Modified modules list only those components which differ from the standard module listed in the WJ-8617B Instruction Manual.

1.7 TYPE WJ-8617B-26 VHF/UHF RECEIVER — MAIN CHASSIS

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A3	RF/IF Motherboard	1	794189-15	14632	
A3A1	Not Used				
A3A2	VLF Converter Assembly	1	716005-1	14632	
A3A4	VHF Low Band	1	794095-2	14632	
A3A8	AGC Amplifier Assembly	1	784002-2	14632	
A3A14	SSB Bypass Assembly	1	798074-2	14632	
A3A16	AM Demodulator/IF Output	1	726015-1	14632	
A3A22	32.1 MHz Reference Assembly	1	776007-1	14632	
A5A2	Synthesizer Interface Assembly	1	796321-2	14632	
A8	Antenna Input Filter	1	794165-2	14632	
J16	Connector, Plug	10	50-330-0039-91	98291	
P20	Connector, Plug	13	50-024-3875-91	14632	
P55	Same as P20				
P56	Connector, Plug	1	UG146510	80058	
P80	Same as J16				
P81	Same as J16				
P82	Same as P20				
P83	Same as J16				
W25	Cable Assembly	1	380259-33	14632	
C38	Cable Assembly	1	380259-27	14632	
W39	Cable Assembly	1	380259-28	14632	

1.7.1 TYPE 794189-15 RF/IF MOTHERBOARD ASSEMBLY REF DESIG PREFIX A3

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A1	Not Used				
A2*	VLF Converter Assembly		See A3A2 on MC PL		
A3*	VHF High Band Preselector Assembly		See A3A3 on MC PL		
A4*	HF Low Band Preselector Assembly		See A3A4 on MC PL		
A5*	VHF Preamplifier Assembly		See A3A5 on MC PL		
A6*	First Converter Assembly		See A3A6 on MC PL		
A7*	Second Converter Assembly		See A3A7 on MC PL		
A8*	AGC Assembly		See A3A8 on MC PL		
A9*	21.4 MHz IF Amplifier No. 1 Assembly		See A3A9 on MC PL		
A10*	21.4 MHz IF Amplifier No. 2 Assembly		See A3A10 on MC PL		
A11*	21.4 MHz IF Amplifier No. 3 Assembly		See A3A11 on MC PL		
A12*	21.4 MHz IF Amplifier No. 4 Assembly		See A3A12 on MC PL		
A13*	21.4 MHz IF Amplifier No. 5 Assembly		See A3A13 on MC PL		
A14*	SSB Demodulator Assembly		See A3A14 on MC Pl		
A15*	Audio/Video/COR Assembly		See A3A15 on MC PL		
A16*	AM Demodulator Assembly		See A3A16 on MC PL		
A17*	FM Demodulator No. 1 Assembly		See A3A17 on MC PL		
A18*	FM Demodulator No. 2 Assembly		See A3A18 on MC PL		
A19*	FM Demodulator No. 3 Assembly		See A3A19 on MC PL		
A20*	FM Demodulator No. 4 Assembly		See A3A20 on MC PL		
A21*	FM Demodulator No. 5 Assembly		See A3A21 on MC PL		
A22*	UHF LO Synthesizer		See A3A22 on MC PL		
C1	Capacitor, Ceramic, Disc: 4700 pF, 20%, 50 V	28	8121-050-651-472M	59660	
C2 Thru C4	Same as C1				
C5	Not Used				
C6 Thru C29	Same as C1				
C30	Capacitor, Electrolytic, Tantalum: 18 µF, 10%, 20 V	1	196D186X9020KE3	56289	
C31	Capacitor, Ceramic, Disc: .01 µF, 20%, 50 V	19	34453-1	14632	
C32 Thru C41	Same as C31				
C42	Capacitor, Electrolytic, Tantalum: 200 µF, 20%, 15 V	1	MTP207M015P1C	76055	
C43	Capacitor, Ceramic, Disc: .1 µF, 20%, 50 V	1	34475-1	14632	
C44 Thru C47	Same as C31				
C48	Not Used				

*For appropriate module reference Main Chassis Parts List.

REF DESIG PREFIX A3

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C49 Thru C52	Same as C31				
C53	Capacitor, Ceramic, Disc: .47 µF, 20%, 50 V	4	34452-1	14632	
C54	Same as C53				
C55	Capacitor, Electrolytic, Tantalum: 27 µF, 10%, 35 V	1	196D276X9035TE4	56289	
C56	Same as C53				
C57	Same as C53				
C58	Capacitor, Ceramic, Disc: 1000 pF, 5%, 100 V	1	8121-100-COGO-102J	59660	
CR1	Diode	4	5082-2800	28480	
CR2 Thru CR4	Same as CR1				
CR5	Diode	1	1N462A	80131	
FB1	Ferrite Bead	17	56-590-65-4A	02114	
FB2 Thru FB17	Same as FB1				
L1	Coil, Fixed: 18 µH, 10%	11	1537-42	99800	
L2 Thru L11	Same as L1				
P1	Cable Assembly	1	34832-2	14632	
P2	Connector, Plug	12	50-328-3875-91	98291	
P3 Thru P11	Same as P2				
P12	Connector, Paddle Board	1	88213-1	00779	
P14	Same as P2				
P15	Same as P2				
Q1	Transistor	1	2N4921	80131	
Q2	Transistor	1	2N2222A	80131	
R1	Resistor, Fixed, Film: 1.0 kΩ, 5%, 1/4 W	5	CF1/4-1K/J	09021	
R2	Same as R1				
R3	Resistor, Fixed, Film: 150 kΩ, 5%, 1/4 W	1	CF1/4-150K/J	09021	
R4	Resistor, Fixed, Film: 470Ω, 5%, 1/4 W	1	CF1/4-470 OHMS/J	09021	
R5	Resistor, Fixed, Film: 100Ω, 5%, 1/4 W	1	CF1/4-100 OHMS/J	09021	
R6 Thru R8	Same as R1				
R9	Resistor, Fixed, Film: 390Ω, 5%, 1/4 W	2	CF1/4-390 OHMS/J	09021	
R10	Same as R9				
R11	Resistor, Trimmer, Film: 10 kΩ, 10%, 1/2 W	2	62PR10K	73138	
R12	Same as R11				
R13	Resistor, Fixed, Film: 15 kΩ, 5%, 1/4 W	1	CF1/4-15K/J	09021	

REF DESIG PREFIX A3

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
R14	Resistor, Fixed, Film: 4.7 kΩ, 5%, 1/4 W	1	CF1/4-4.7K/J	09021	
R15	Resistor, Fixed, Film: 2.2 kΩ, 5%, 1/4 W	2	CF1/4-2.2K/J	09021	
R16	Same as R15				
U1	Voltage Regulator	1	LM340AT-5.0	27014	
U2	Integrated Circuit	1	867442	14632	
U3	Integrated Circuit, OP Amplifier	3	LM324N	27014	
U4	Same as U3				
U5	Same as U3				
U6	Integrated Circuit	1	SN74LS138N	01295	
U7	Integrated Circuit	1	SN74LS32N	01295	
U8	Integrated Circuit	1	SN74LS04N	01295	
VR1	Diode: 5.6 V	1	1N752A	80131	
VR2	Diode	2	1N756A	80131	
VR3	Same as VR2				
W1	Cable Assembly	1	380259-1	14632	
W2	Cable Assembly	1	380259-2	14632	
W3	Cable Assembly	1	380259-3	14632	
W4	Cable Assembly	1	380259-4	14632	
W5	Cable Assembly	1	380259-5	14632	
W6	Cable Assembly	1	380259-32	14632	
XA1	Connector	11	MK30C-13-195-4381	81312	
XA2 Thru XA8	Same as XA1				
XA9	Connector	10	MK15C-13-195	81312	
XA10 Thru XA13	Same as XA9				
XA14 Thru SA16	Same as XA1				
XA17 Thru XA21	Same as XA9				
XA22	Connector	1	88374-7	00779	

1.7.2 TYPE 716005-1 VLF CONVERTER ASSEMBLY REF DESIG PREFIX A3A2

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A1	Preselector, Mixer and IF Amplifier Assembly	1	380559-1	14632	
C1	Capacitor, Ceramic, Disc: .47 µF, 20%, 50 V	6	34452-1	14632	
C2	Same as C1				
C3	Capacitor, Ceramic, Monolithic: 1000 pF, ±2%, 100 V	2	150-100-NPO-102G	51642	
C4	Same as C3				
C5	Capacitor, Electrolytic, Tantalum: 100 µF, 20%, 20 V	1	196D107X0020TE4	56289	
C6	Capacitor, Electrolytic, Tantalum: 22 pF, 20%, 10 V	1	196D226X0010JE3	56289	
C7 Thru C10	Same as C1				
L1	Coil, Fixed: 18 pH, 10%,	3	1025-50	99800	
L2	Same as L1				
L3	Same as L1				
R1	Resistor, Fixed, Film: 12 kΩ, 5%, 1/8 W	1	CF1/8-12K/J	09021	
R2	Resistor, Fixed, Film: 1.8 kΩ, 5%, 1/8 W	1	CF1/8-1.8K/J	09021	
R3	Resistor, Fixed, Film: 750Ω, 5%, 1/8 W	1	CF1/8-750 OHMS/J	09021	
R4	Resistor, Fixed, Film: 1.5 kΩ, 5%, 1/8 W	1	CF1/8-1.5K/J	09021	
U1	Integrated Circuit	1	LM358N	27014	
VR1	Diode	1	1N751A	80131	

1.7.2.1 Part 380559-1 VLF Converter Assembly — REF DESIG PREFIX A3A2A1

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A1	Preselector Assembly	1	280607-1	14632	
A2	Mixer Assembly	1	280608-1	14632	
A3	IF Amplifier	1	280609-1	14632	
C1	Capacitor, Ceramic, Feedthru	4	33728-7	14632	
C2 Thru C4	Same as C1				
FB1	Ferrite Bead	4	56-590-65-4A	02114	
FB2 Thru FB4	Same as FB1				
J1	Connector, Receptacle	3	1012-1511-000	19505	
J2	Same as J1				
J3	Connector, Receptacle	1	1004-7511-002	19505	
J4	Same as J1				
R1	Resistor, Fixed, Film: 750Ω, 5%, 1/8 W	1	CF1/8-750 OHMS/J	09021	

1.7.2.1.2 Part 280607-1 Preselector

REF DESIG PREFIX **A3A2A1A1**

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Ceramic, Monolithic: 430 pF, 2%, 100 V	1	150-100-NPO-431G	51642	
C2	Capacitor, Ceramic, Monolithic: 62 pF, 2%, 100 V	1	150-100-NPO-620G	51642	
C3	Capacitor, Ceramic, Monolithic: 620 pF, 2%, 100 V	1	150-100-NPO-621G	51642	
C4	Capacitor, Ceramic, Monolithic: 180 pF, 2%, 100 V	1	150-100-NPO-181G	51642	
C5	Capacitor, Ceramic, Monolithic: 510 pF, 2%, 100 V	2	150-100-NPO-511G	51642	
C6	Capacitor, Ceramic, Monolithic: 120 pF, 2%, 100 V	1	200-100-NPO-121G	51642	
C7	Same as C5				
L1	Coil, Variable: 1.2 µH	2	6740-14	04213	
L2	Same as L1				
L3	Coil, Variable: 1.5 µH	1	6740-15	04213	
L4	Coil, Fixed: 1.2 µH, 10%	1	1537-14	99800	

1.7.2.1.2 Part 280608-1 Mixer — REF DESIG PREFIX A3A2A1A2

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Ceramic, Monolithic: 200 pF, 2%, 100 V	1	150-100-NPO-201G	51642	
C2	Capacitor, Ceramic, Disc: 0.01 µF, 20%, 50 V	6	34453-1	14632	
C3 Thru C7	Same as C2				
L1	Coil, Fixed: 18 µH, 10%	2	1025-50	99800	
L2	Same as L1				
R1	Resistor, Variable, Film: 1 kΩ, 10%, 1/4 W	1	3262X-1-102	80294	
R2	Resistor, Variable, Film: 10 kΩ, 10%, 1/4 W	1	3262X-1-103	80294	
R3	Resistor, Fixed, Film: 332Ω, 1%, 1/10 W	1	RN55C3320F	81349	
R4	Resistor, Fixed, Film: 100Ω, 5%, 1/8 W	2	CF1/8-100 OHMS/J	09021	
R5	Resistor, Fixed, Film: 68Ω, 5%, 1/8 W	1	CF1/8-68 OHMS/J	09021	
R6	Same as R4				
U1	Mixer, Balanced	1	TAK-3H-9	15542	
U2	RF Amplifier	2	MWA130	14713	
U3	Same as U2				

1.7.2.1.3 Type 280609-1 Amplifier Assembly

REF DESIG PREFIX A3A2A1A3

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Ceramic, Monolithic: 220 pF, 2%, 100 V	2	150-100-NPO-221G	51642	
C2	Capacitor, Ceramic, Disc: 15 pF, 5%, 50 V	2	8101-050-COGO-150J	59660	
C3	Capacitor, Ceramic, Monolithic: 470 pF, 2%, 100 V	1	150-100-NPO-471G	51642	
C4	Same as C2				
C5	Same s C1				
C6	Capacitor, Ceramic, Disc: .01 µF, 20%, 50 V	3	34453-1	14632	
C7	Same as C6				
C8	Capacitor, Ceramic, Chip: 4700 pF, 10%, 50 V	2	ATC700B472KP50X	29990	
C9	Not Used				
C10	Same as C8				
C11	Same as C6				
C12	Capacitor, Ceramic, Chip: 33 pF, 2%, 500 V	1	ATC700B330GP500X	29990	
CR1	Diode	2	GC4371-15	50101	
CR2	Same as CR1				
CR3	Diode	2	5082-3188	28480	
CR4	Same as CR3				
L1	Coil, Variable: 0.1 µH	2	6740-01	04213	
L2	Coil, Variable: .15 µH	2	6740-15	04213	
L3	Coil, Air: .15 H	1	180296-1	14632	
L4	Same as L2				
L5	Same as L1				
L6	Coil, Fixed: 18 µH, 10%	2	1025-50	99800	
L7	Inductor	1	170134-1	14632	
L8	Coil, Fixed	1	190187-1	14632	
L9	Same as L6				
R1	Resistor, Fixed, Film: 430Ω, 5%, 1/8 W	2	CF1/8-430 OHMS/J	09021	
R2	Resistor, Fixed, Film: 12Ω, 5%, 1/8 W	1	CF1/8-12 OHMS/J	09021	
R3	Same as R1				
R4	Resistor, Fixed, Film: 560Ω, 5%, 1/8 W	1	CF1/8-560 OHMS/J	09021	
U1	Amplifier	1	UTO-310	24593	
Y1	Crystal, Quartz	1	91805-40	14632	

1.7.3 TYPE 794095-2 LOW BAND PRESELECTOR ASSEMBLY REF DESIG PREFIX A3A4

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Ceramic, Disc: .022 µF, 10%, 100 V	2	8121-100-X7RO-223K	59660	
C2	Capacitor, Ceramic, Disc: .1 µF, 20%, 50 V	6	34475-1	14632	
C3	Same as C2				
C4	Same as C1				
C5	Capacitor, Ceramic, Disc: .01 µF, 10%, 100 V	8	8121-100-W5RO-103K	59660	
C6	Not Used				
C7	Capacitor, Ceramic, Monolithic: 82 pF, ±2%, 100 V	2	200-100-NPO-820G	51642	
C8	Capacitor, Ceramic, Monolithic: 1100 pF, ±2%, 100 V	2	150-100-NPO-112G	51642	
C9	Not Used				
C10	Capacitor, Ceramic, Monolithc: 100 pF, ±2%, 100 V	2	200-100-NPO-101G	51642	
C11	Not Used				
C12	Capacitor, Ceramic, Monolithic: 1000 pF, ±2%, 100 V	1	150-100-NPO-102G	51642	
C13	Capacitor, Ceramic, Monolithic: 39 pF, ±2%, 100 V	2	150-100-NPO-390G	51642	
C14 Thru C17	Not Used				
C18	Capacitor, Ceramic, Monolithic: 2200 pF, ±2%, 100 V	1	200-100-NPO-222G	51642	
C19	Not Used				
C20	Same as C13				
C21	Same as C10				
C22	Same as C7				
C23	Same as C8				
C24	Not Used				
C25	Not Used				
C26	Same as C5				
C27	Same as C5				
C28	Capacitor, Ceramic, Monolithic: 3.3 pF, ±.1 pF, 100 V	14	8101-100-COJO-339B	59660	
C29	Same as C28				
C30	Capacitor, Ceramic, Monolithic: 12 pF, ±5%, 100 V	6	100-100-NPO-120J	51642	
C31	Same as C30				
C32	Same as C30				
C33	Capacitor, Ceramic, Monolithic: 4.7 pF, ±.1 pF, 100 V	4	100-100-NPO-479B	51642	
C34	Capacitor, Ceramic, Disc: 18 pF, 5%, 100 V	4	8111-100-COGO-180J	59660	
C35	Capacitor, Ceramic, Monolithic: 22 pF, ±5%, 100 V	2	100-100-NPO-220J	51642	
C36	Same as C33				
C37	Same as C34				
C38	Same as C34				
C39	Same as C33				
C40	Same as C34				
C41	Same as C33				
C42	Same as C35				
C43	Same as C28				

REF DESIG PREFIX **A3A4**

REF DESIGS	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C44	Same as C28				
C45	Same as C30				
C46	Same as C30				
C47	Same as C28				
C48	Same as C5				
C49	Same as C5				
C50	Not Used				
C51	Capacitor, Ceramic, Disc: 1.5 pF, ±.1 pF, 100 V	2	8101-100-COKO-159B	59660	
C52	Capacitor, Ceramic, Monolithic: 10 pF, ±5%, 100 V	4	100-100-NPO-100J	51642	
C53	Same as C52				
C54	Same as C28				
C55	Capacitor, Ceramic, Disc: 2.2 pF, ±.1 pF, 100 V	6	8101-100-COJO-229B	59660	
C56	Capacitor, Ceramic, Monolithic: 12 pF, ±5%, 100 V	4	100-100-NPO-120J	51642	
C57	Same as C30				
C58	Not Used				
C59	Same as C56				
C60	Same as C56				
C61	Same as C55				
C62	Same as C56				
C63	Not Used				
C64	Same as C30				
C65	Same as C28				
C66	Same as C51				
C67	Same as C52				
C68	Same as C52				
C69	Not Used				
C70	Same as C5				
C71	Same as C5				
C72	Same as C55				
C73	Same as C28				
C74	Capacitor, Ceramic, Disc: 3.9 pF, 0.25 pF, 100 V	4	8101-100-COJO-399C	59660	
C75	Same as C74				
C76	Same as C28				
C77	Same as C28				
C78	Capacitor, Ceramic, Monolithic: 5.6 pF, ±0.25 pF, 100 V	4	100-100-NPO-569C	51642	
C79	Capacitor, Ceramic, Disc: 6.8 pF, ±.25 pF, 100 V	2	8101-100-COHO-689C	59660	
C80	Same as C55				
C81	Same as C78				
C82	Same as C78				
C83	Same as C28				
C84	Same as C78				
C85	Same as C55				

REF DESIG PREFIX **A3A4**

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C86	Same as C79				
C87	Same as C28				
C88	Same as C28				
C89	Same as C74				
C90	Same as C74				
C91	Same as C55				
C92	Same as C5				
C93 Thru C96	Same as C2				
C97	Capacitor, Ceramic, Disc: 1000 pF, 500 V	5	59Z5U102P	91984	
C98 Thru C101	Same as C97				
CR1	Diode	16	5082-3188	18480	
CR2 Thru CR16	Same as CR1				
J1	Connector, Receptacle	2	1009-7511-000	19505	
J2	Same as J1				
L1	Coil, Fixed: 47 µH, 10%	10	1025-60	99800	
L2 Thru L4	Same as L1				
L5	Coil, Variable: .33 µH	2	6740-07	04213	
L6	Coil, Variable: 2.8 µH	2	7067	04213	
L7	Coil, Variable: .58 µH	1	7066	04213	
L8	Same as L6				
L9	Same as L5				
L10	Same as L1				
L11	Same as L1				
L12	Coil, Variable: .47 µH	2	6740-09	04213	
L13	Coil, Variable: 15 mH	2	6740-08	04213	
L14	Coil, Variable: 68 mH	1	6740-12	04213	
L15	Same as L13				
L16	Same as L12				
L17	Same as L1				
L18	Same as L1				
L19	Coil, Variable: 0.323 µH	2	6807	04213	
L20	Coil, Variable: 0.232 µH	2	6808	04213	
L21	Coil, Variable: 0.522 µH	1	6809	04213	
L22	Same as L20				
L23	Same as L19				
L24	Same as L1				

REF DESIG PREFIX A3A4

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
L25	Same as L1				
L26	Coil, Variable: 0.202 µH	2	6810	04213	
L27	Coil, Variable	2	7221	04213	
L28	Coil, Variable	2	7220	04213	
L29	Same as L27				
L30	Same as L26				
R1	Resistor, Fixed, Film: 2.2 kΩ, 5%, 1/8 W	4	CF1/8-2.2K/J	09021	
R2 Thru R4	Same as R1				
R5	Resistor, Fixed, Film: 1.0 kΩ, 5%, 1/8 W	8	CF1/8-1.0K/J	09021	
R6 Thru R12	Same as R5				
R13	Resistor, Network: 100Ω, 2%, 1/5 W	1	4308R-102-101	80294	

1.7.4 TYPE 784002-2 AGC AMPLIFIER ASSEMBLY REF DESIG PREFIX A3A8

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
	Listed below are the differences:				
R9	Resistor, Trimmer, Film: 100 kΩ, 10%, 1/2 W	2	62PAR100K	73138	
R12	Resistor, Trimmer, Film: 50 kΩ, 10%, 1/2 W	1	62PAR50K	73138	
R72	Same as R9				

See Schematic (A3A8).

1.7.5 TYPE 798074-2 SSB BYPASS ASSEMBLY

REF DESIG PREFIX **A3A14**

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
R1	Resistor, Fixed, Film: 51.1Ω, 1%, 1/10 W	2	RN55C51R1F	81349	
R2	Same as R1				
R3	Resistor, Fixed, Film: 16.2Ω, 1%, 1/10 W	2	RN55D16R2F	81349	
R4	Same as R3				
R5	Resistor, Trimmer, Film: 200Ω, 10%, 3/4 W	1	89PR200	73138	

1.7.6 TYPE 776007-1 32.1 MHz SYNTHESIZER ASSEMBLY REF DESIG PREFIX A3A22

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A1	Digital Assembly	1	380540-1	14632	
A2	Oscillator Buffer Assembly	1	380541-1	14632	
C1	Capacitor, Ceramic, Feedthru: 1000 pF, 150 V	1	54-809-002-FC102P	33095	
FB1	Ferrite Bead	4	56-590-65-4A	02114	
FB2 Thru FB4	Same as FB1				
FL1	Filter, Modified	4	33728-18	14632	
FL2 Thru FL4	Same as FL1				
J1	Connector, Receptacle	3	1012-1511-000	19505	
J2	Same as J1				
J3	Same as J1				

1.7.6.1 **Part 380540-1 Digital Assembly** REF DESIG PREFIX **A3A22A1**

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Electrolytic, Tantalum: 18µ F, 10%, 20 V	1	196D186X9020KE3	56289	
C2	Capacitor, Electrolytic, Tantalum: 22 µF, 20%, 15 V	1	196D226X0015KE3	56289	
C3	Capacitor, Ceramic, Disc: .01 µF, 20%, 50 V	1	34453-1	14632	
C4	Capacitor, Electrolytic, Tantalum: 1 µF, 20%, 35 V	1	196D105X0035HE3	56289	
C5	Capacitor, Ceramic, Disc: .1 F, 20%, 50 V	3	34475-1	14632	
C6	Capacitor, Micro-Q Dip: .03 µF, 50 V	1	1R0GUQ02A	31745	
C7	Same as C5				
C8	Same as C5				
L1	Coil, Fixed: 18 µH, 10%	1	1025-50	99800	
R1	Resistor, Fixed, Film: 27Ω, 5%, 1/8 W	1	CF1/8-27 OHMS/J	09021	
R2	Resistor, Fixed, Film: 5.6 kΩ, 5%, 1/8 W	1	CF1/8-5.6K/J	09021	
R3	Resistor, Fixed, Film: 510Ω, 5%, 1/8 W	1	CF1/8-510 OHMS/J	09021	
R4	Resistor, Fixed, Film: 2.7 kΩ, 5%, 1/8 W	1	CF1/8-2.7K/J	09021	
R5	Resistor, Fixed, Film: 1.0 kΩ, 5%, 1/8 W	1	CF1/8-1.0K/J	09021	
U1	Integrated Circuit	1	MC4044P	04713	
U2	Integrated Circuit	2	SN74LS168N	01295	
U3	Integrated Circuit	1	SN745S168N	01295	
U4	Integrated Circuit	1	SN74LS169N	01295	
U5	Same as U2				

1.7.6.2 Part 380541-1 Oscillator Buffer Assembly — REF DESIG PREFIX A3A22A2

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Ceramic, Disc: .01 µF, 20%, 50 V	11	34453-1	14632	
C2	Not Used				
C3	Capacitor, Ceramic, Monolithic: 27 pF, ±2%, 100 V	3	150-100-NPO-270G	51642	
C4	Capacitor, Ceramic, Monolithic: 39 pF, ±2%, 100 V	1	150-100-NPO-390G	51642	
C5	Capacitor, Ceramic, Disc: .1 pF, 20%, 50 V	5	34475-1	14632	
C6	Same as C1				
C7	Capacitor, Ceramic, Tantalum: 1 pF, 20%, 35 V	1	196D105X0035HE3	56289	
C8	Capacitor, Ceramic, Monolithic: 20 pF, ±5%, 100 V	1	100-100-NPO-472G	51642	
C9	Capacitor, Ceramic, Monolithic: 4700 pF, ±2%, 100 V	4	300-100-NPO-220J	51642	
C10	Same as C9				
C11	Capacitor, Electrolytic, Tantalum: 18 µF, 10%, 20 V	1	196D186X9020KE3	56289	
C12	Capacitor, Ceramic, Disc: .47 µF, 20%, 50 V	1	34452-1	14632	
C13	Same as C9				
C14	Same as C9				
C15	Capacitor, Electrolytic, Tantalum: 22 µF, 20%, 10 V	1	196D226X0010JE3	56289	
C16	Capacitor, Ceramic, Monolithic: 12 pF, ±5%, 100 V	1	100-100-NPO-120J	51642	
C17	Capacitor, Ceramic, Monolithic: 2.0 pF, ±.1 pF, 100 V	2	100-100-NPO-209B	51642	
C18	Same as C17				
C19	Same as C5				
C20	Same as C1				
C21	Same as C1				
C22	Same as C3				
C23	Same as C3				
C24	Capacitor, Ceramic, Monolithic: 510 pF, ±2%, 100 V	1	150-100-NPO-511G	51642	
C25	Same as C5				
C26	Same as C5				
C27 Thru C33	Same as C1				
C34	Same as C5				
CR1	Diode	1	U11-3102	52673	
CR2	Diode	2	5082-3188	28480	
CR3	Same as CR2				
CR4	Diode	2	1N4446	80131	
CR5	Same as CR4				
L1	Coil, Variable	1	6740-17	04213	
L2	Coil, Fixed: .47 µH	1	1025-12	99800	
L3	Coil, Fixed: 18 µH, 10%	9	1025-50	99800	
L4	Same as L3				
L5	Coil, Fixed, Molded: 18 µH, 10%	1	1025-02	99800	
L6	Coil, Variable: 68 µH	2	6740-11	04213	
L7	Same as L6				

REF DESIG PREFIX **A3A22A2**

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
L8 Thru L14	Same as L3				
Q1	Transistor	1	2N2857/JAN	81350	
Q2	Transistor	1	2N2222A	80131	
Q3	Transistor	1	2N2369	80131	
R1	Resistor, Fixed, Film: 47 kΩ, 5%, 1/8 W	1	CF1/8-47K/J	09021	
R2	Resistor, Fixd, Film: 4.7 kΩ, 5%, 1/8 W	1	CF1/8-4.7K/J	09021	
R3	Resistor, Fixed, Film: 6.8 kΩ, 5%, 1/8 W	2	CF1/8-6.8K/J	09021	
R4	Resistor, Fixed, Film: 10 kΩ, 5%, 1/8 W	3	CF1/8-10K/J	09021	
R5	Same as R2				
R6	Resistor, Fixed, Film: 56Ω, 5%, 1/8 W	3	CF1/8-56 OHMS/J	09021	
R7	Resistor, Fixed, Film: 470Ω, 5%, 1/8 W	2	CF1/8-470 OHMS/J	09021	
R8	Resistor, Fixed, Film: 180Ω, 5%, 1/8 W	1	CF1/8-180 OHMS/J	09021	
R9	Resistor, Fixed, Film: 15Ω, 5%, 1/8 W	3	CF1/8-15 OHMS/J	09021	
R10	Same as R9				
R11	Same as R9				
R12	Same as R3				
R13	Same as R7				
R14	Resistor, Fixed, Film: 22Ω, 5%, 1/8 W	1	CF1/8-22 OHMS/J	09021	
R15	Same as R4				
R16	Same as R4				
R17	Resistor, Fixed, Film: 2.2 kΩ, 5%, 1/8 W	2	CF1/8-22K/J	09021	
R18	Resistor, Fixed, Film: 39Ω, 5%, 1/8 W	2	CF1/8-39 OHMS/J	09021	
R19	Same as R6				
R20	Resistor, Fixed, Film: 1.8 kΩ, 5%, 1/8 W	1	CF1/8-1.8K/J	09021	
R21	Same as R6				
R22	Resistor, Fixed, Film: 5.6 kΩ, 5%, 1/8 W	1	CF1/8-5.6K/J	09021	
R23	Same as R18				
R24	Resistor, Fixed, Film: 300Ω, 5%, 1/8 W	2	CF1/8-300 OHMS/J	09021	
R25	Resistor, Fixed, Film: 18Ω, 5%, 1/8 W	1	CF1/8-18 OHMS/J	09021	
R26	Same as R24				
R27	Same as R7				
R28	Resistor, Fixed, Film: 5.1 kΩ, 5%, 1/8 W	1	CF1/8-5.1K/J	09021	
R29	Resistor, Fixed, Film: 1.0 kΩ, 5%, 1/8 W	1	CF1/8-1.0K/J	09021	
U1	Amplifier RF	1	MWA130	04713	
U2	Integrated Circuit	2	MWA110	04713	
U3	Same as U2				
U4	Integrated Circuit	1	LM358N	27014	
Y1	Crystal, Quartz	1	91805-40	14632	

1.7.7 TYPE 796321-2 SYNTHESIZER INTERFACE ASSEMBLY REF DESIG PREFIX A5A2

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
	Listed below are the differences:				
Q1	Not Used				
R8	Resistor, Fixed, Film: 1.5 kΩ, 5%, 1/4 W	1	CF1/4-1.5K/J	09021	
R13	Not Used				

1.7.8 TYPE 794165-2 ANTENNA INPUT FILTER ASSEMBLY REF DESIG PREFIX A8

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A1	HP/LP Filter Assembly	1	270617-2	14632	
J1	Connector, Receptacle	2	UG58AU	80058	
J2	Same as J1				
J3	Connector, Receptacle	2	1012-1511-000	19505	
J4	Same as J3				

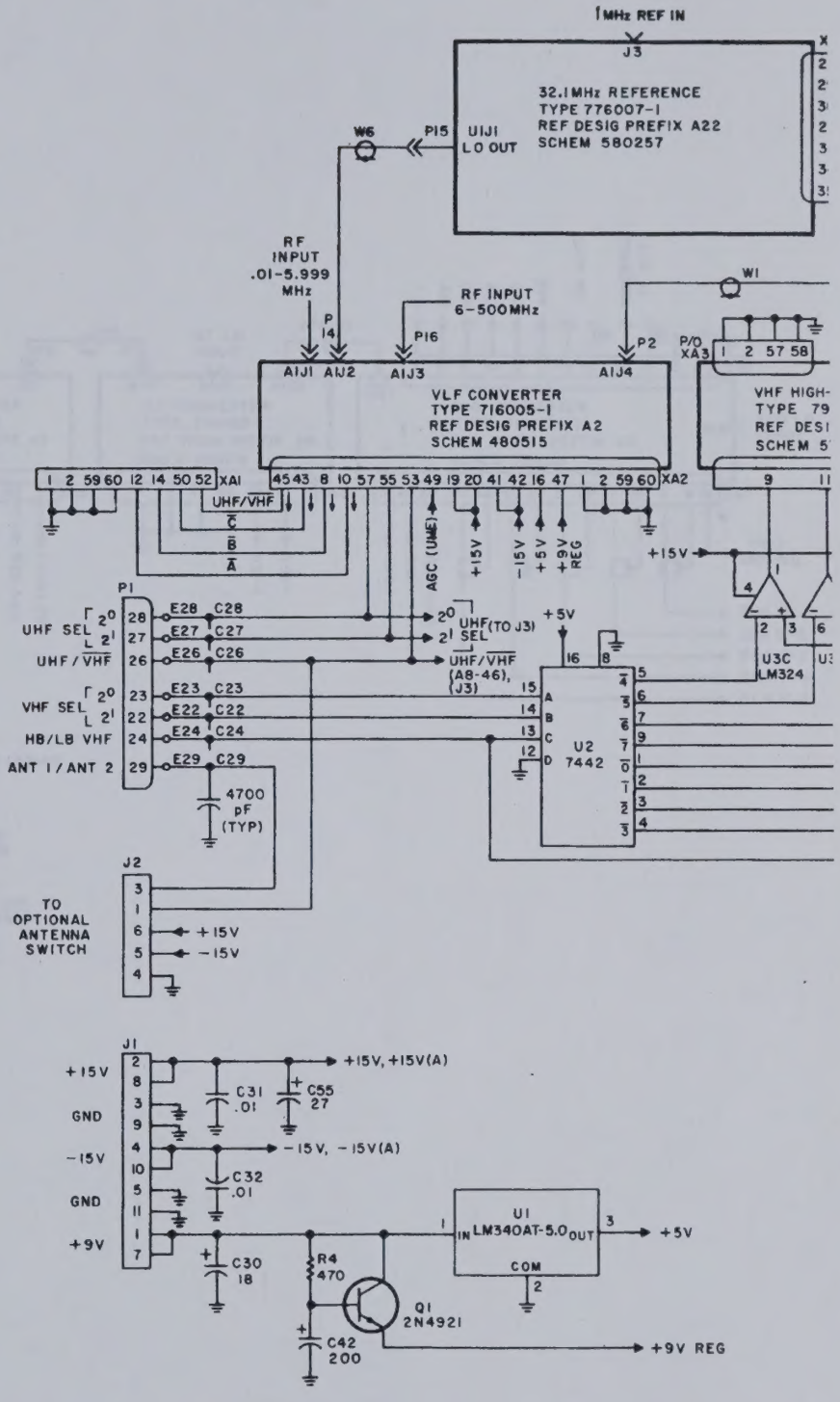
1.7.8.1 Part 270617-2 HP/LP Filter Assembly

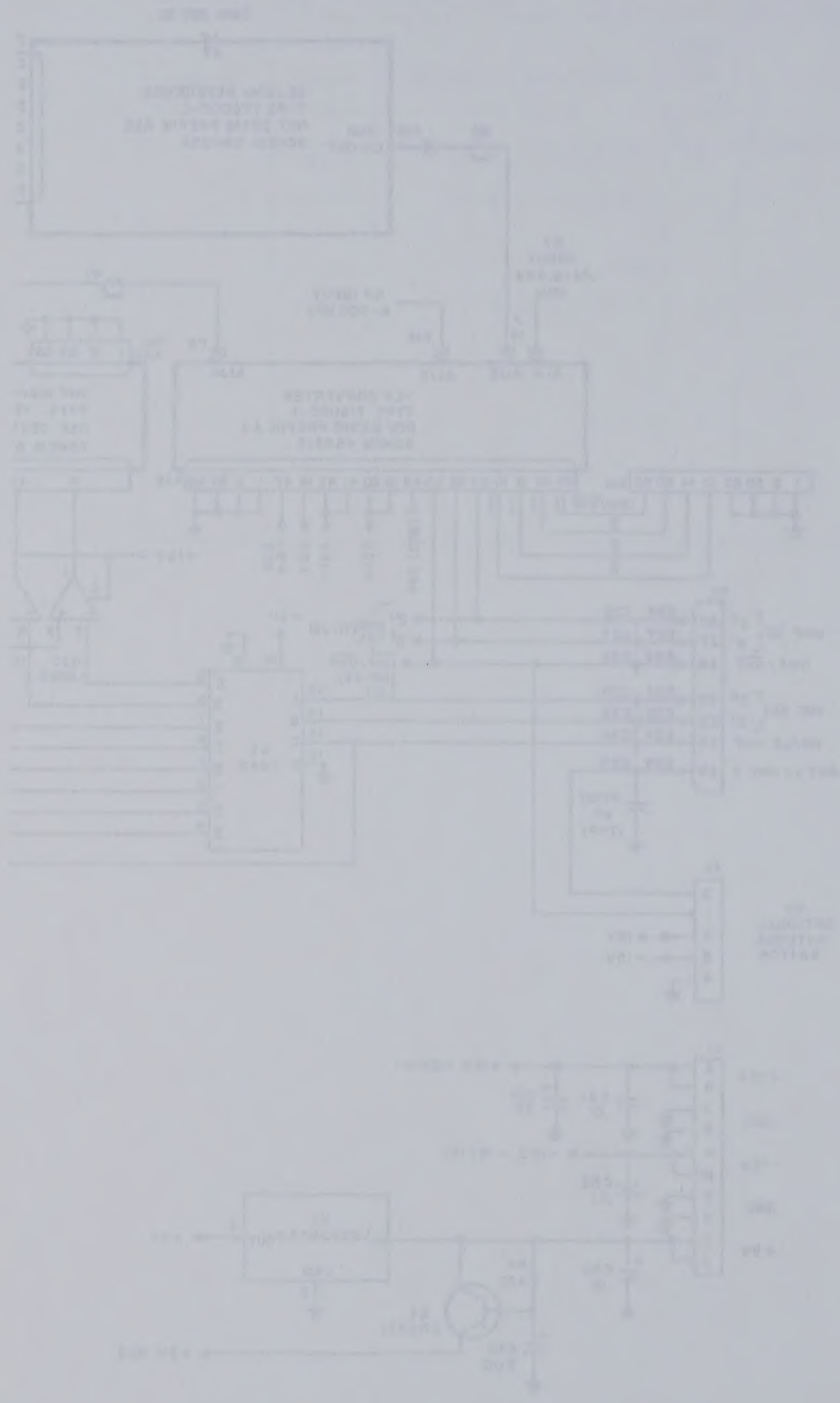
REF DESIG PREFIX A8A1

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
C1	Capacitor, Ceramic, Chip: 4.3 pF, 0.5 pF, 500 V	2	ATC700B4R3DP500X	29990	
C2	Capacitor, Ceramic, Chip: 9.1 pF, 0.5 pF, 500 V	1	ATC700B9R1DP500X	29990	
C3	Same as C1				
C4	Capacitor, Ceramic, Disc: .1 µF, 20%, 50 V	1	34475-1	14632	
C5	Capacitor, Electrolytic, Tantalum: 10 µF, 20%, 15 V	1	MNS-015-106R-20	14674	
C6 Thru C8	Not Used				
L1	Coil, Fixed: 19.8 mH	2	170160-1	14632	
L2	Same as L1				
L3	Not Used				
L4	Not Used				

TES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS IN μF.
   c) INDUCTANCE IS IN μH.
2. ONLY PINS USED BY EACH MODULE ARE SHOWN. SOME OTHER PINS OF XA6, XA13, AND XA17-21 HAVE SIGNALS CONNECTED FOR PRINTED WIRING SIMPLIFICATION.
3. (S) INDICATES THAT PIN IS USED FOR COAX SHIELD.
4. THE UNUSED PINS OF U7 ARE CONNECTED TO XA6 AS SHOWN, FOR WIRE WRAP AVAILABILITY.
5. INSTALL JUMPER PLUGS TO CONNECT E34 TO E35 & E37 TO E38 FOR STANDARD OPERATION. INSTALL JUMPER PLUGS TO CONNECT E34 TO E36 & E37 TO E39 (DASHED LINES) FOR DIGITAL/AUDIO/VIDEO
6. SSB BYPASS (TYPE 798074-1) IS INSTALLED IF SSB DEMODULATOR IS NOT USED.
7. COAX CONNECTIONS BETWEEN P.C. CONNECTORS ARE WIRE WRAPPED.
8. CONNECTIONS MARKED WITH AN ASTERISK * ARE WIRE WRAPPED.

(SEE TABLE B SHEET 3 OF 3)





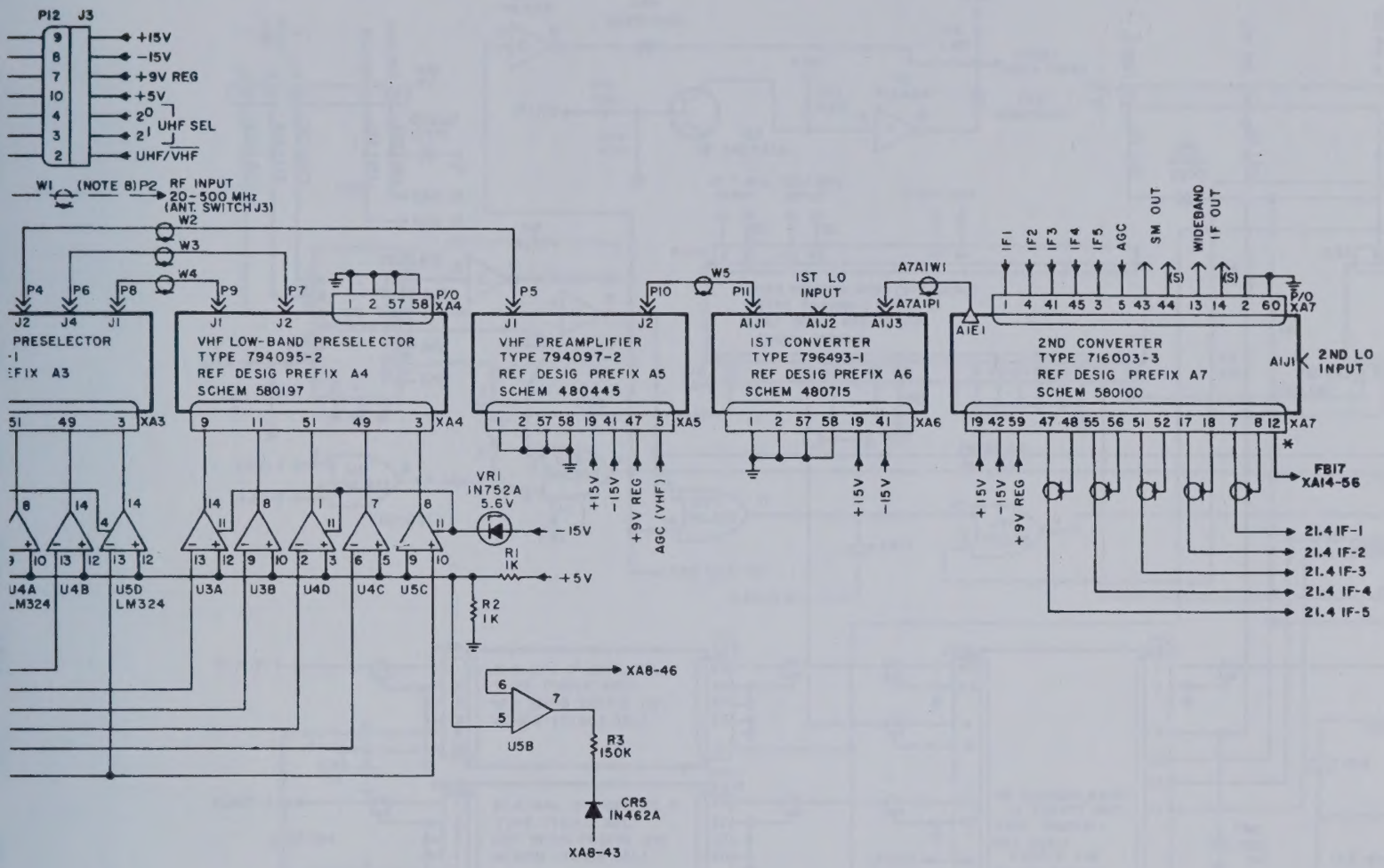
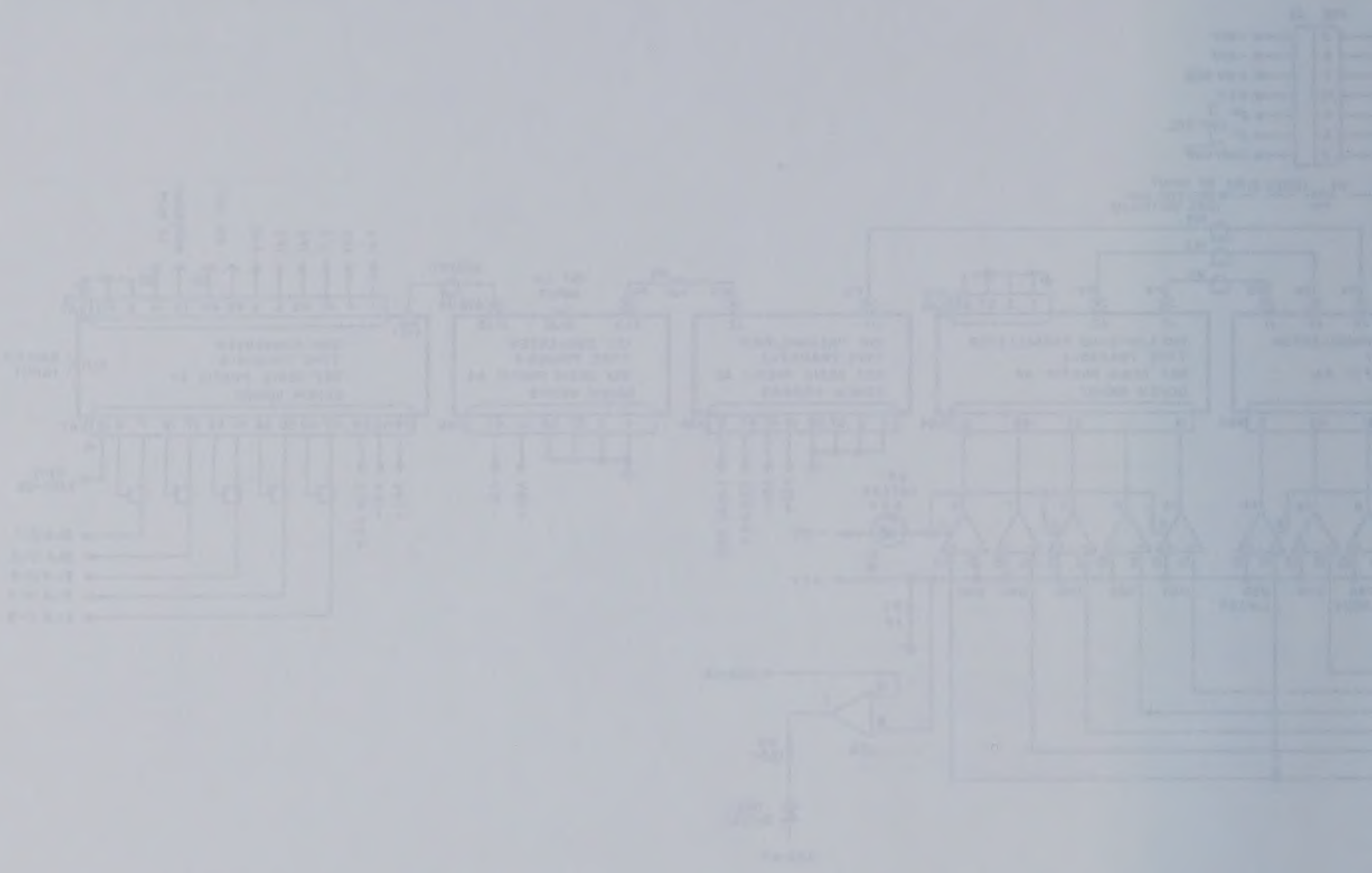
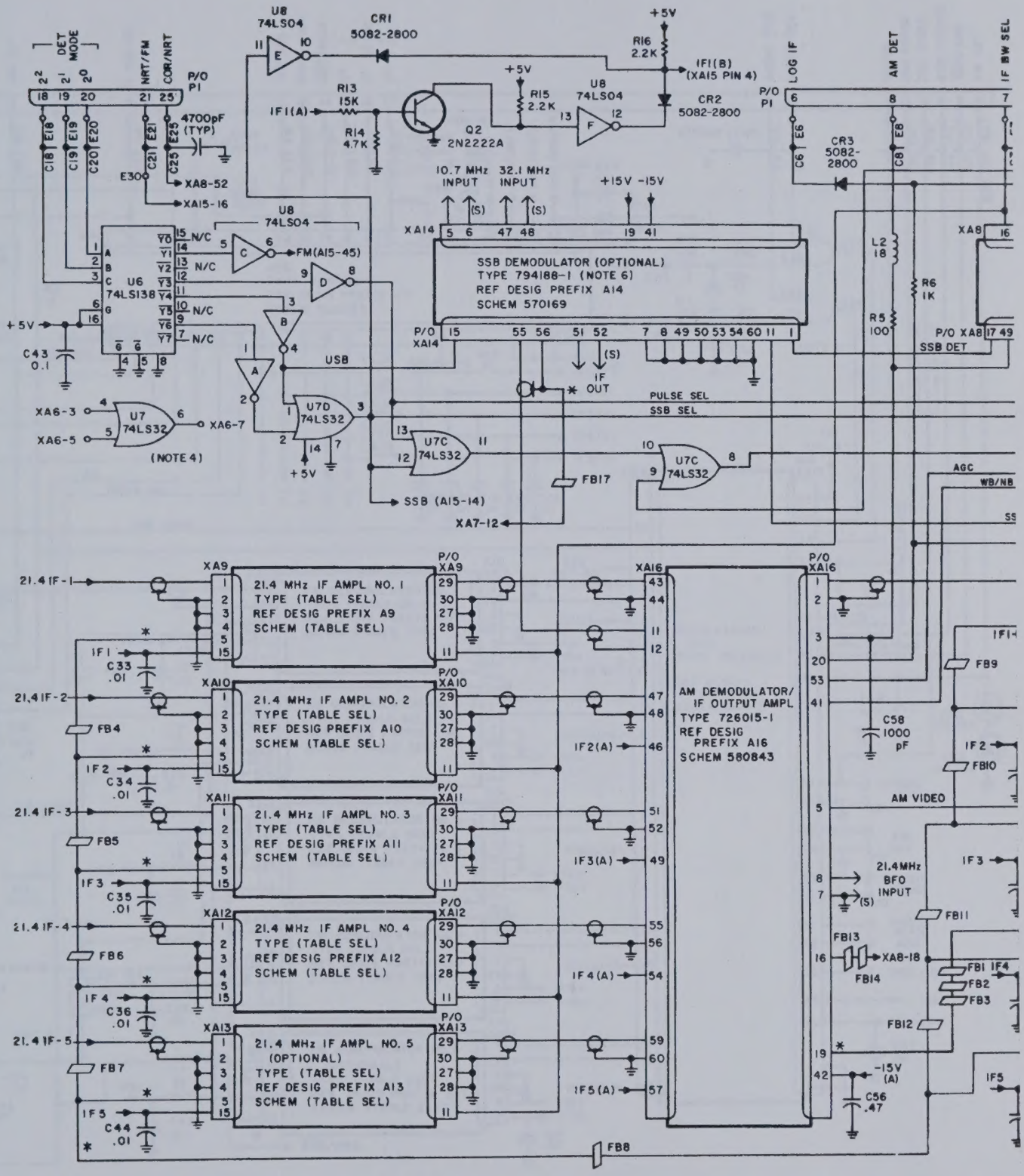


Figure 1-1. Type 794189-15, RF/IF Motherboard (A3), Schematic Diagram 481339 (Sheet 1 of 3) (02)




U8 74LS04
CR1 5082-2800
+5V
R16 2.2K
IF1(B) (XA15 PIN 4)
R13 15K
IF1(A)
R14 4.7K
Q2 2N2222A
R15 2.2K
U8 74LS04
CR2 5082-2800
P/O P1
LOG IF
AM DET
IF BW SEL
DET MODE
NRR/FM
COR/NRT
4700pF (TYP)
E300
XA8-52
XA15-16
CR3 5082-2800
10.7 MHz INPUT
32.1 MHz INPUT
+15V -15V
XA14
SSB DEMODULATOR (OPTIONAL)
TYPE 794188-1 (NOTE 6)
REF DESIG PREFIX A14
SCHEM 570169
L2 18
R6 1K
R5 100
SSB DET
U6 74LS138
U8 74LS04
FM(AI5-45)
N/C
C43 0.1
USB
IF OUT
PULSE SEL
SSB SEL
XA6-3
XA6-5
U7 74LS32
XA6-7
(NOTE 4)
U7D 74LS32
U7C 74LS32
FB17
SSB (AI5-14)
XA7-12
AGC
WB/NB
21.4 IF-1
XA9
21.4 MHz IF AMPL NO. 1
TYPE (TABLE SEL)
REF DESIG PREFIX A9
SCHEM (TABLE SEL)
IF1
C33 .01
21.4 IF-2
XA10
21.4 MHz IF AMPL NO. 2
TYPE (TABLE SEL)
REF DESIG PREFIX A10
SCHEM (TABLE SEL)
FB4
IF2
C34 .01
21.4 IF-3
XA11
21.4 MHz IF AMPL NO. 3
TYPE (TABLE SEL)
REF DESIG PREFIX A11
SCHEM (TABLE SEL)
FB5
IF3
C35 .01
21.4 IF-4
XA12
21.4 MHz IF AMPL NO. 4
TYPE (TABLE SEL)
REF DESIG PREFIX A12
SCHEM (TABLE SEL)
FB6
IF4
C36 .01
21.4 IF-5
XA13
21.4 MHz IF AMPL NO. 5
(OPTIONAL)
TYPE (TABLE SEL)
REF DESIG PREFIX A13
SCHEM (TABLE SEL)
FB7
IF5
C44 .01
FB8
XA16
AM DEMODULATOR/
IF OUTPUT AMPL
TYPE 726015-1
REF DESIG
PREFIX A16
SCHEM 580843
IF2(A)
IF3(A)
IF4(A)
IF5(A)
FB9
C58 1000 pF
AM VIDEO
21.4MHz BFO INPUT
FB11
FB13
FB14
XA8-18
FB1
FB2
FB3
FB12
-15V (A)
C56 .47

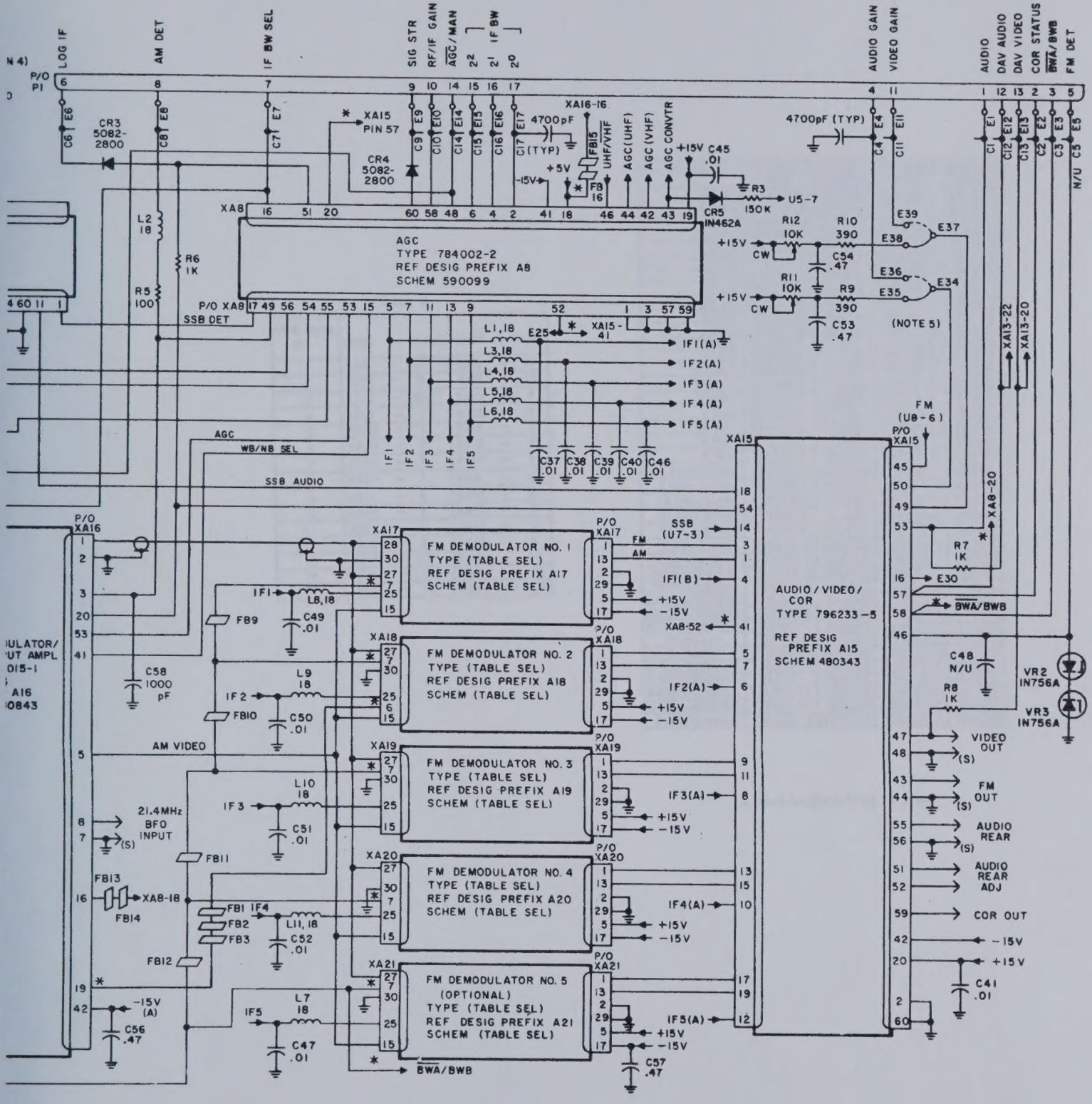


Figure 1-1. Type 794189-15, RF/IF Motherboard (A3), Schematic Diagram 481339 (Sheet 2 of 3) (02)

TABLE 8

W/W CONN NO	CONN - PIN NO.	CONN - PIN NO.
1	XA8 - 52	XA15 - 41
2	XA18 - 6	XA16 - 19
3	XA15 - 58	XA21 - 7
4	XA21 - 7	XA20 - 7
5	XA20 - 7	XA19 - 7
6	XA19 - 7	XA18 - 7
7	XA18 - 7	XA17 - 7
8	XA17 - 7	XA9 - 5
9	XA9 - 5	XA10 - 5
10	XA10 - 5	XA11 - 5
11	XA11 - 5	XA12 - 5
12	XA12 - 5	XA13 - 5
13	XA15 - 57	XA8 - 20
14	XA16 - 16	XA8 - 18
15	XA7 - 12	XA14 - 56

IF BW	IF AMPL (A9-A13)		FM DEMOD (A17 A21)	
	TYPE	SCHEM	TYPE	SCHEM
1.5 kHz	724006-22	380742	794106-10	380741
6.4 kHz	724006-18	370348	794106-3	370347
4 kHz	724006-23	380757	794106-11	380755
10 kHz	724006-1	370348	794106-1	370347
15 kHz	724006-21	370348	794106-8	370347
20 kHz	724006-2	370348	794106-2	370347
25 kHz	724006-17	370348	794106-7	370347
30 kHz	724006-10	370348	794106-5	370347
40 kHz	724006-8	370348	794107-5	370346
50 kHz	724006-3	370348	794107-1	370346
60 kHz	724006-24	380758	794107-13	380756
75 kHz	724006-9	381291	794107-6	370346
100 kHz	724006-4	370348	794107-2	370346
250kHz	724006-5	370348	794107-3	370346
300kHz	724006-6	370348	794107-4	370346
500kHz	724019-1	470305	794104-2	470157
1 MHz	724007-1	470164	794104-1	470157
2 MHz	724007-2	470164	794105-1	470158
4 MHz	724008-1	370349	794105-2	470158
8 MHz	796337-1	380513	794105-4	470158
3.2 kHz/10kHz	726009-1	480506	796354-1	480549
6.4 kHz/10 kHz	726009-5	480506	796354-3	480549
10 kHz/20kHz	726009-11	480506	796354-7	480549
20 kHz/50kHz	726009-2	480506	796354-2	480549
30kHz/50 kHz	726009-8	480506	796355-5	480549
50kHz/100kHz	726009-12	480506	796355-5	480546
100kHz/300kHz	726009-4	480506	796355-2	480546
250kHz/500kHz	726009-13	480506	796356-3	480518
500kHz/1000kHz	726010-2	480507	796356-2	480518
1000kHz/2000kHz	726010-3	480507	796357-1	480522
2000kHz/4000kHz	726010-4	480507	796357-2	480522
4000kHz/8000kHz	726010-6	480507	796357-4	480522
10/50kHz	726009-22	480506	796354-12	480549
* 10/50kHz	726009-23	480506	796354-12	480549
* 300/500kHz	726009-24	480506	796356-5	480518
*1000/2000kHz	726010-11	480507	796357-1	480522
*4000/6000kHz	726010-12	480507	796357-3	480522
*8000/10000kHz	726010-10	480507	796357-6	480522
8000/10000kHz	726010-9	480507	796357-6	480522

* USES GAUSIAN TYPE FILTERS

Figure 1-1. Type 794
Schemati

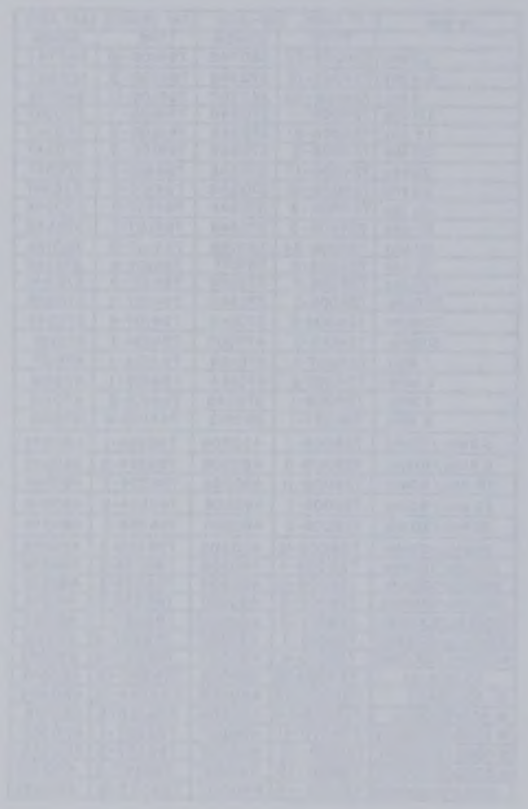


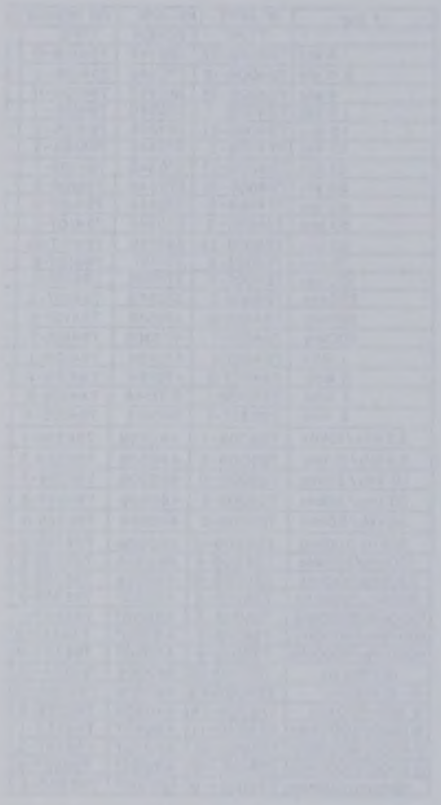
TABLE B

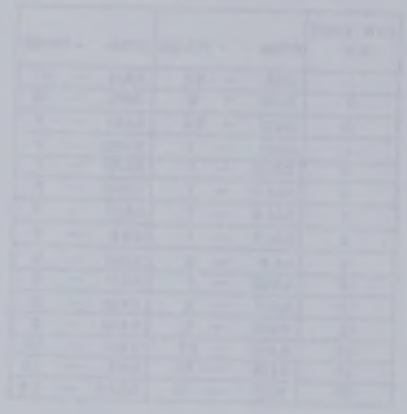
W/W CONN NO	CONN – PIN NO.	CONN – PIN NO.
1	XA8 – 52	XA15 – 41
2	XA18 – 6	XA16 – 19
3	XA15 – 58	XA21 – 7
4	XA21 – 7	XA20 – 7
5	XA20 – 7	XA19 – 7
6	XA19 – 7	XA18 – 7
7	XA18 – 7	XA17 – 7
8	XA17 – 7	XA9 – 5
9	XA9 – 5	XA10 – 5
10	XA10 – 5	XA11 – 5
11	XA11 – 5	XA12 – 5
12	XA12 – 5	XA13 – 5
13	XA15 – 57	XA8 – 20
14	XA16 – 16	XA8 – 18
15	XA7 – 12	XA14 – 56

IF BW	IF AMPL (A9-A13)		FM DEMOD (A
	TYPE	SCHEM	TYPE
1.5 kHz	724006-22	380742	794106-10
6.4 kHz	724006-18	370348	794106-3
4 kHz	724006-23	380757	794106-11
10 kHz	724006-1	370348	794106-1
15 kHz	724006-21	370348	794106-8
20 kHz	724006-2	370348	794106-2
25 kHz	724006-17	370348	794106-7
30 kHz	724006-10	370348	794106-5
40 kHz	724006-8	370348	794107-5
50 kHz	724006-3	370348	794107-1
60 kHz	724006-24	380758	794107-13
75 kHz	724006-9	381291	794107-6
100 kHz	724006-4	370348	794107-2
250kHz	724006-5	370348	794107-3
300kHz	724006-6	370348	794107-4
500kHz	724019-1	470305	794104-2
1 MHz	724007-1	470164	794104-1
2 MHz	724007-2	470164	794105-1
4 MHz	724008-1	370349	794105-2
8 MHz	796337-1	380513	794105-4
3.2 kHz/10kHz	726009-1	480506	796354-1
6.4 kHz/10 kHz	726009-5	480506	796354-3
10 kHz/20kHz	726009-11	480506	796354-7
20 kHz/50kHz	726009-2	480506	796354-2
30kHz/50kHz	726009-8	480506	796355-5
50kHz/100kHz	726009-12	480506	796355-5
100kHz/300kHz	726009-4	480506	796355-2
250kHz/500kHz	726009-13	480506	796356-3
500kHz/1000kHz	726010-2	480507	796356-2
1000kHz/2000kHz	726010-3	480507	796357-1
2000kHz/4000kHz	726010-4	480507	796357-2
4000kHz/8000kHz	726010-6	480507	796357-4
10/50kHz	726009-22	480506	796354-12
* 10/50kHz	726009-23	480506	796354-12
* 300/500kHz	726009-24	480506	796356-5
*1000/2000kHz	726010-11	480507	796357-1
*4000/6000kHz	726010-12	480507	796357-3
*8000/10000kHz	726010-10	480507	796357-6
8000/10000kHz	726010-9	480507	796357-6

* USES GAUSIAN TYPE FILTERS

Figure 1-1





LE B

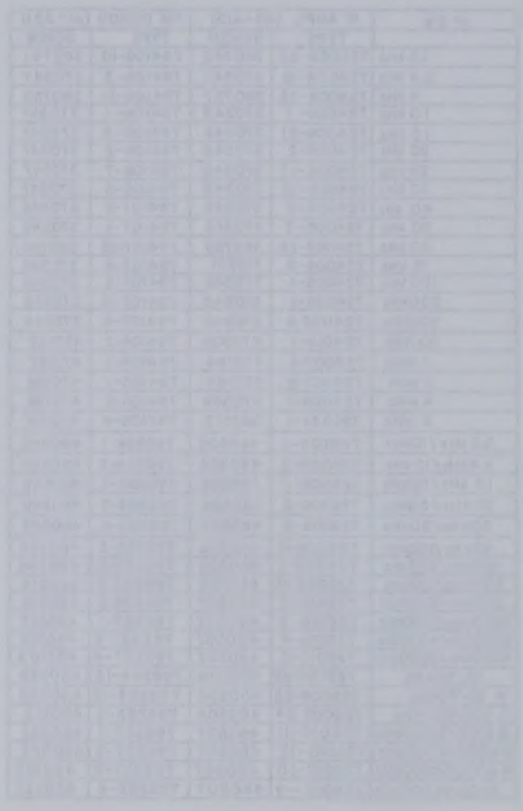
PIN NO.	CONN	- PIN NO.
52	XA15	- 41
6	XA16	- 19
38	XA21	- 7
7	XA20	- 7
7	XA19	- 7
7	XA18	- 7
7	XA17	- 7
7	XA9	- 5
5	XA10	- 5
5	XA11	- 5
5	XA12	- 5
5	XA13	- 5
37	XA8	- 20
16	XA6	— 18
12	XA14	— 56

IF BW	IF AMPL (A9-A13)		FM DEMOD (A17 A21)	
	TYPE	SCHEM	TYPE	SCHEM
1.5 kHz	724006-22	380742	794106-10	380741
6.4 kHz	724006-18	370348	794106-3	370347
4 kHz	724006-23	380757	794106-11	380755
10 kHz	724006-1	370348	794106-1	370347
15 kHz	724006-21	370348	794106-8	370347
20 kHz	724006-2	370348	794106-2	370347
25 kHz	724006-17	370348	794106-7	370347
30 kHz	724006-10	370348	794106-5	370347
40 kHz	724006-8	370348	794107-5	370346
50 kHz	724006-3	370348	794107-1	370346
60 kHz	724006-24	380758	794107-13	380756
75 kHz	724006-9	381291	794107-6	370346
100 kHz	724006-4	370348	794107-2	370346
250kHz	724006-5	370348	794107-3	370346
300kHz	724006-6	370348	794107-4	370346
500kHz	724019-1	470305	794104-2	470157
1 MHz	724007-1	470164	794104-1	470157
2 MHz	724007-2	470164	794105-1	470158
4 MHz	724008-1	370349	794105-2	470158
8 MHz	796337-1	380513	794105-4	470158
3.2 kHz/10kHz	726009-1	480506	796354-1	480549
6.4 kHz/10 kHz	726009-5	480506	796354-3	480549
10 kHz/20kHz	726009-11	480506	796354-7	480549
20 kHz/50kHz	726009-2	480506	796354-2	480549
30kHz/50kHz	726009-8	480506	796355-5	480549
50kHz/100kHz	726009-12	480506	796355-5	480546
100kHz/300kHz	726009-4	480506	796355-2	480546
250kHz/500kHz	726009-13	480506	796356-3	480518
500kHz/1000kHz	726010-2	480507	796356-2	480518
1000kHz/2000kHz	726010-3	480507	796357-1	480522
2000kHz/4000kHz	726010-4	480507	796357-2	480522
4000kHz/8000kHz	726010-6	480507	796357-4	480522
10/50kHz	726009-22	480506	796354-12	480549
* 10/50kHz	726009-23	480506	796354-12	480549
* 300/500kHz	726009-24	480506	796356-5	480518
*1000/2000kHz	726010-11	480507	796357-1	480522
*4000/6000kHz	726010-12	480507	796357-3	480522
*8000/10000kHz	726010-10	480507	796357-6	480522
8000/10000kHz	726010-9	480507	796357-6	480522

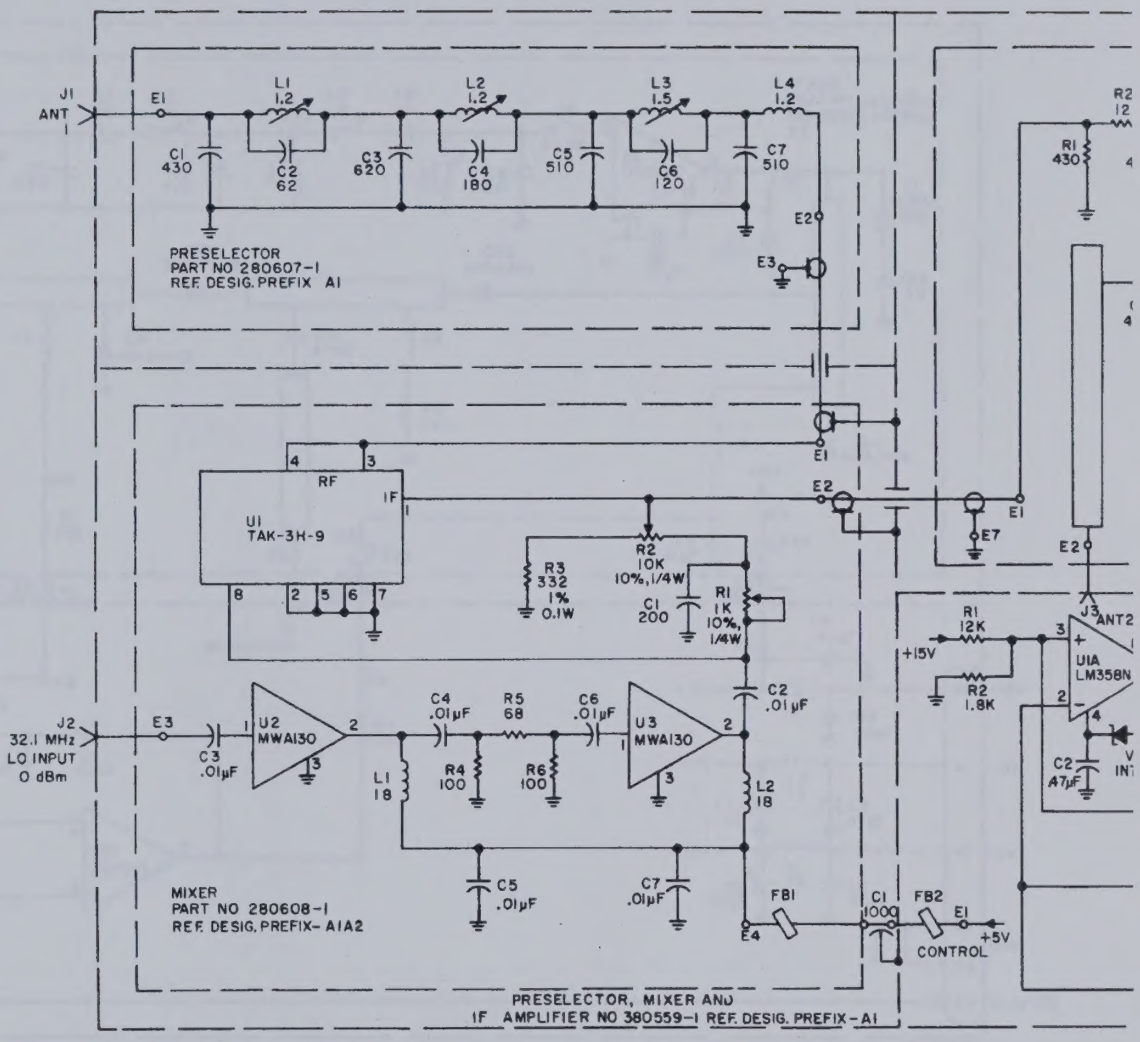
* USES GAUSIAN TYPE FILTERS

IF BW	IF AMPL (A9-A13)		FM DEMOD (A17-A21)	
	TYPE	SCHEM	TYPE	SCHEM
6 kHz	724006-7	381291	794106-3	370347
10 kHz	724006-1	381291	794106-1	370347
20 kHz	724006-2	381291	794106-2	370347
40 kHz	724006-8	381291	794107-5	370346
50 kHz	724006-3	381291	794107-1	370346
75 kHz	724006-9	381291	794107-6	370346
100 kHz	724006-4	381291	794107-2	370346
250 kHz	724006-5	381291	794107-3	370346
300 kHz	724006-6	381291	794107-4	370346
500 kHz	726013-1	380771	794104-2	470157
1 MHz	726013-2	380771	794104-1	470157
2 MHz	726013-3	380771	794105-1	470158
4 MHz	726013-4	380771	794105-2	470158
3.2 kHz	724006-16	380456	794106-6	380455

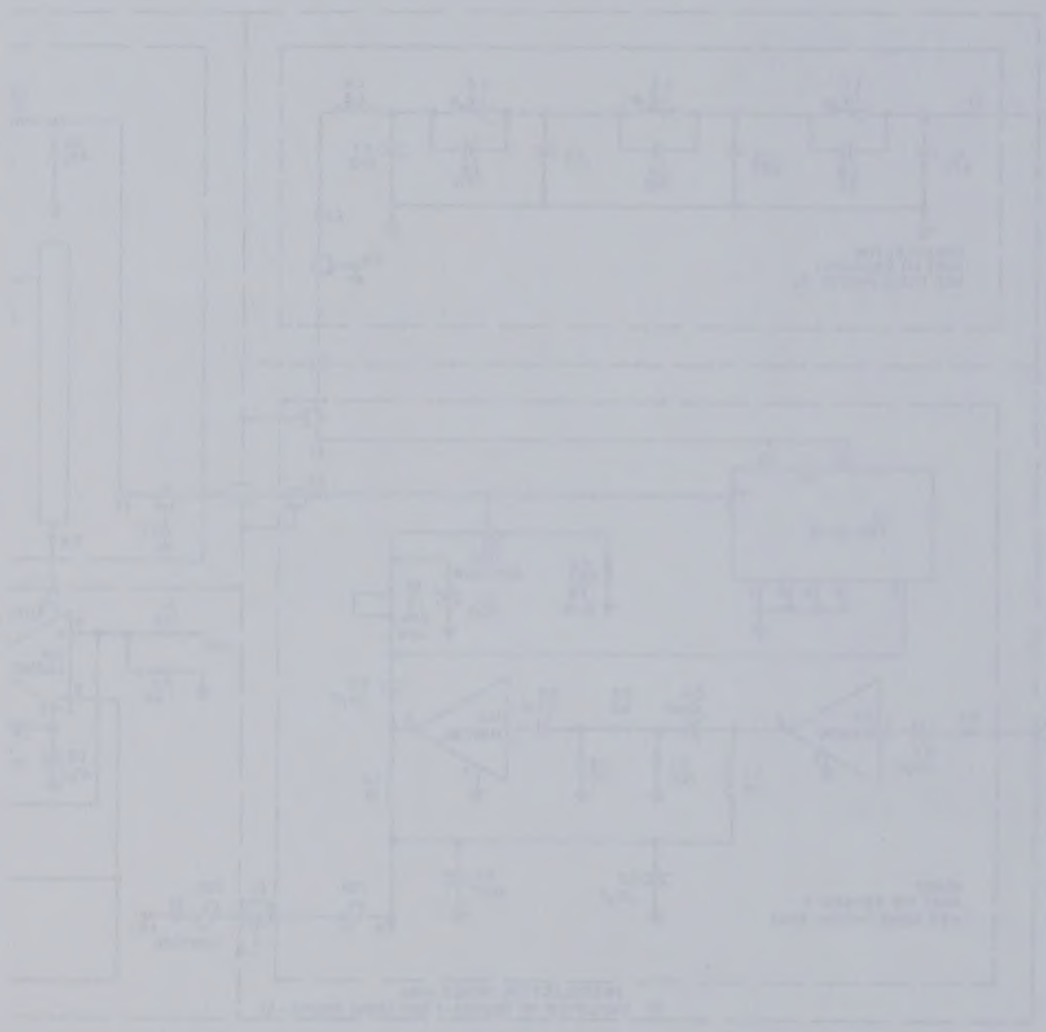
Figure 1-1. Type 794189-15, RF/IF Motherboard (A3), Schematic Diagram 481339 (Sheet 3 of 3) (02)

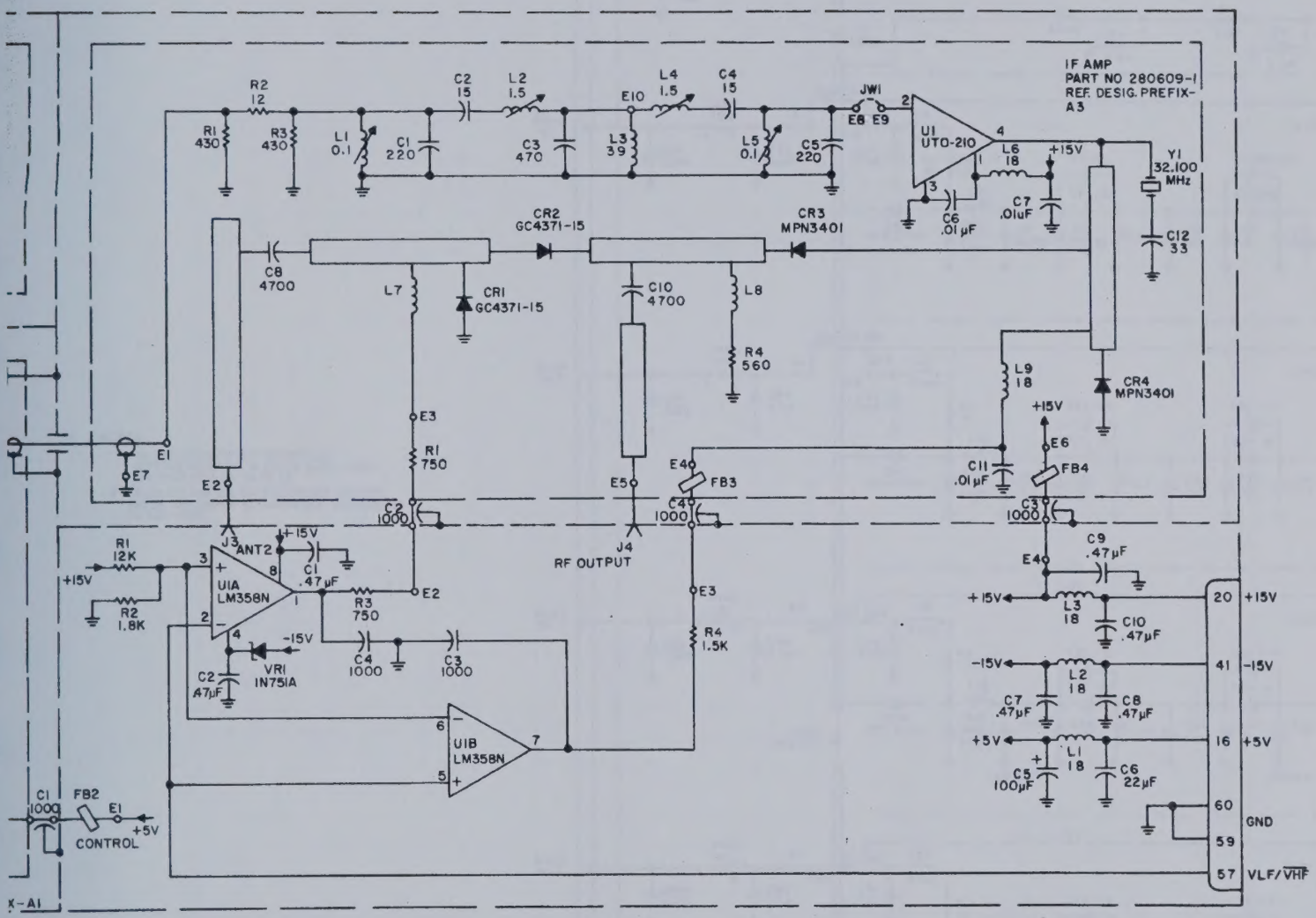


NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) CAPACITANCE IS IN pF.
   b) INDUCTANCE IS IN μH.
   c) RESISTANCE IS IN OHMS, ± 5%, 1/8W



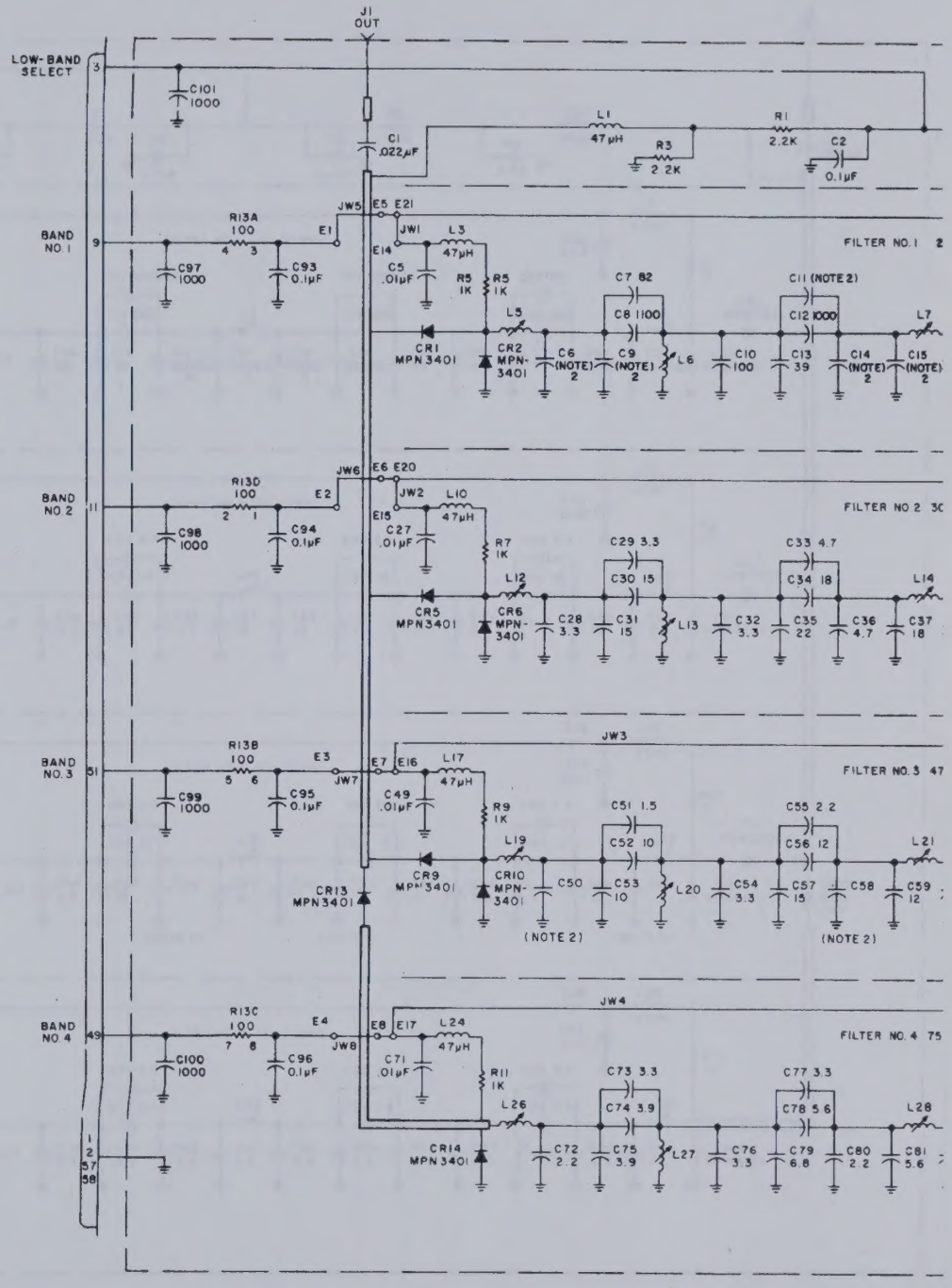
VR	VR1				
U	U1				
R	R4				
L	L3		L	L4	
C	C10		C	C7	
REF DESIG	LAST USED	NOT USED	REF DESIG	LAST USED	NOT USED
716005			280607		





							U	U1		
				U	U3		R	R4		
	L	L4		R	R6		L	L9		
	C	C7		L	L2		CR	CR4		
ED	REF DESIG	LAST USED	NOT USED	C	C7	NOT USED	C	C12	C9	
	280607			REF DESIG	LAST USED	NOT USED	REF DESIG	LAST USED	NOT USED	
				280608			280609			

Figure 1-2. Type 716005-1, VLF Converter (A3A2-A3A2A1A3), Schematic Diagram 480515 (B)



NOTES

1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS IN OHMS, ± 5%, 1/8W.
   b) CAPACITANCE IS IN pF.
2. C6, C9, C11, C14, C15, C16, C17, C19, C24, C50, C58, C63, & C69 ARE TO BE SHOWN BUT DOCUMENTED AS NOT USED.

Figure 1-3.

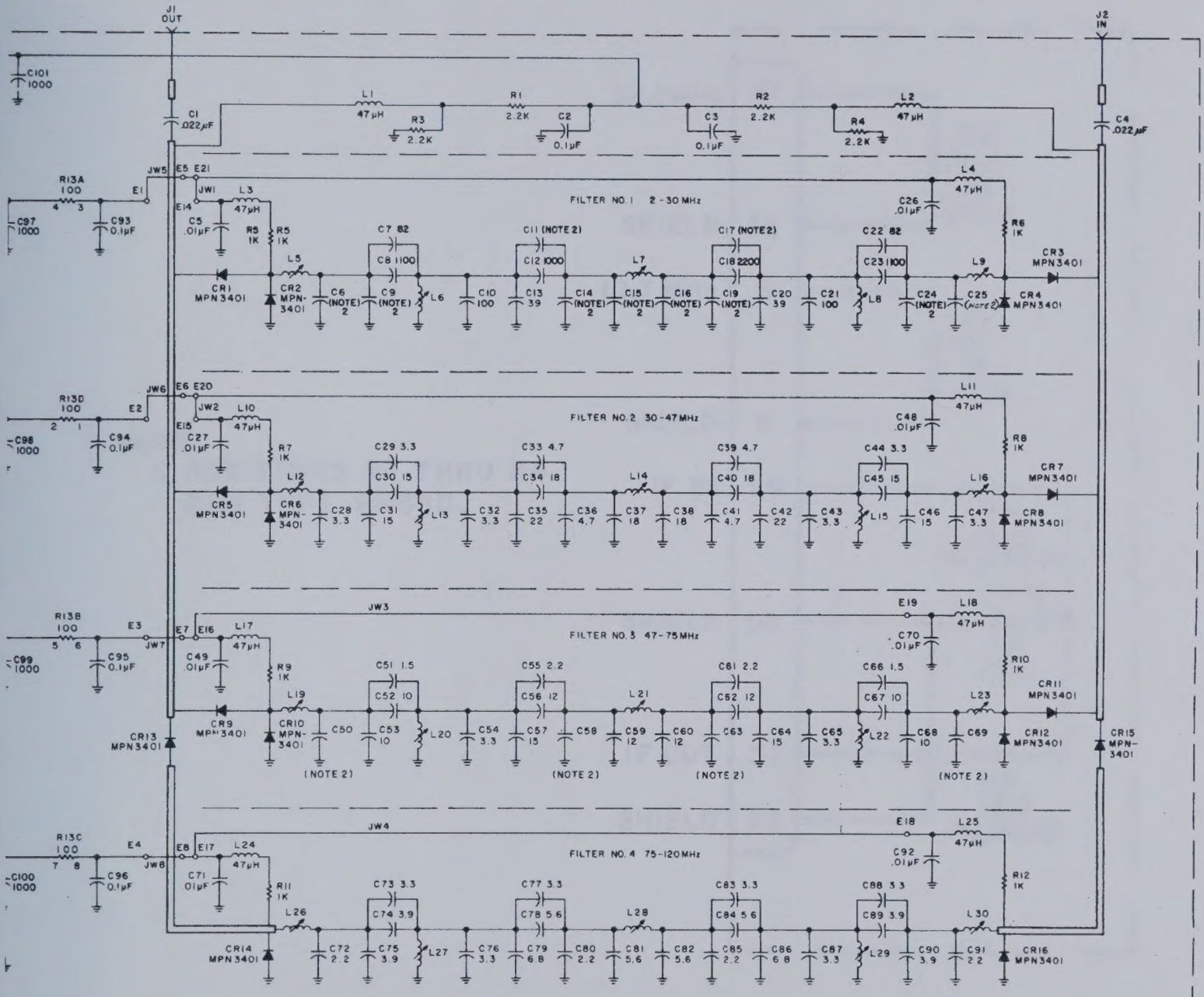
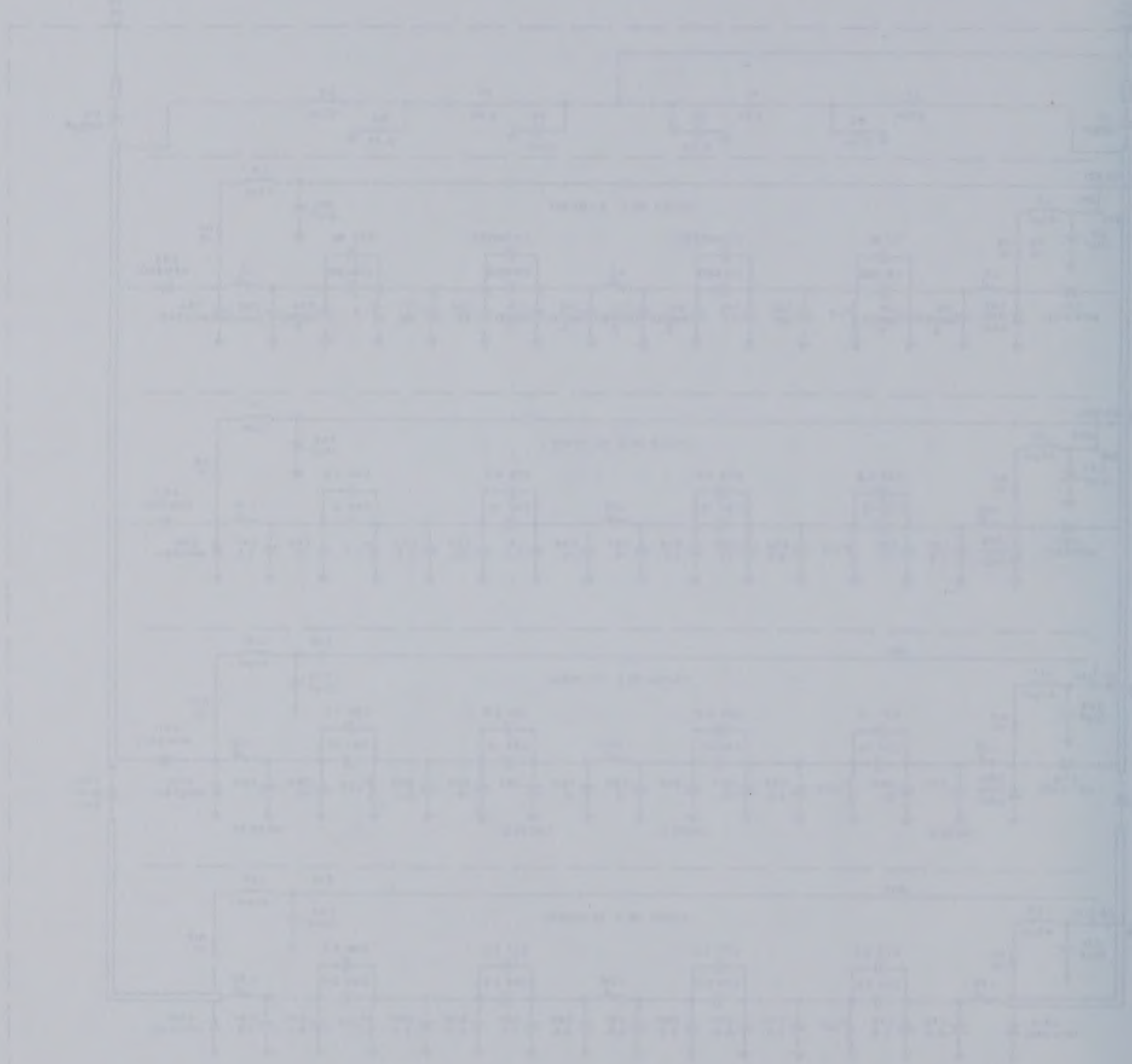


Figure 1-3. Type 794095-2, VHF Low Band Preselector (A3A4), Schematic Diagram 580179 (A)



NOTE:
1. RESISTORS R1 THRU R4 ARE TYPE RN55D.

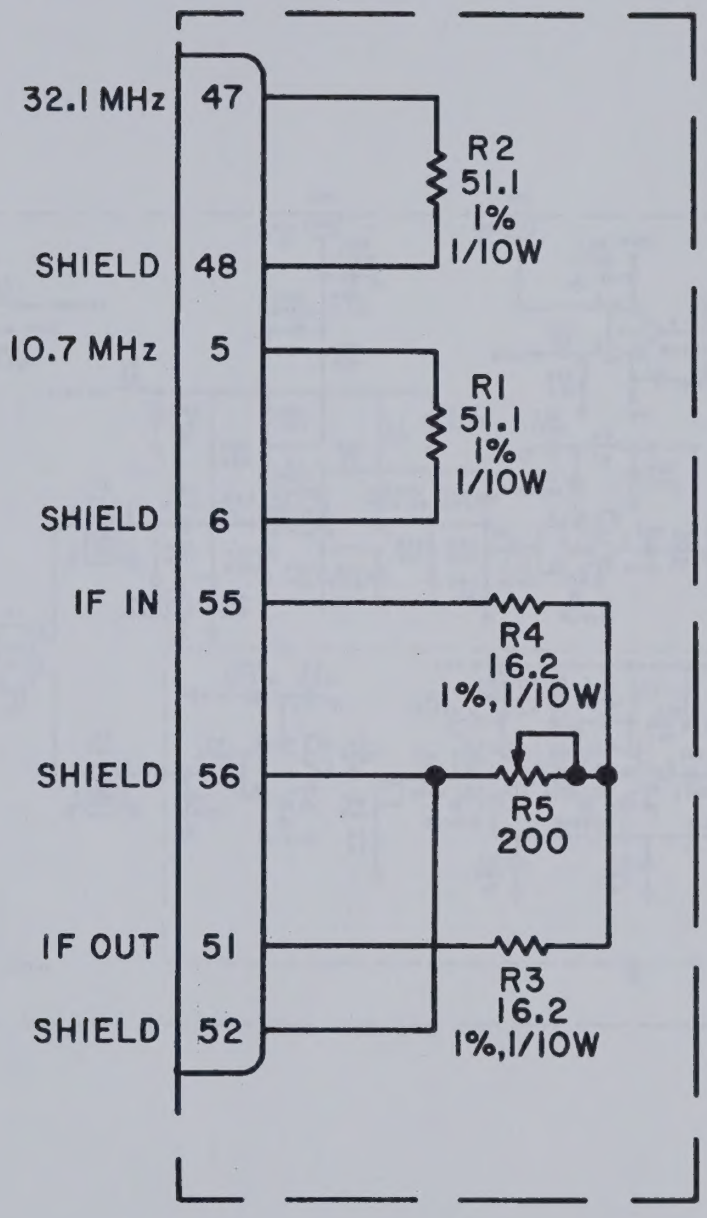
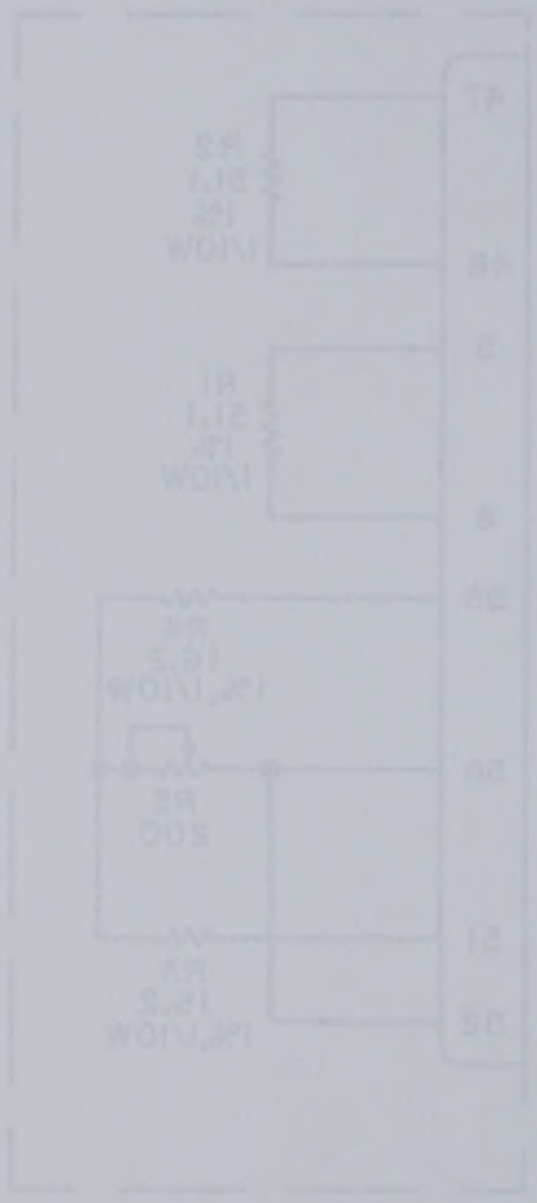
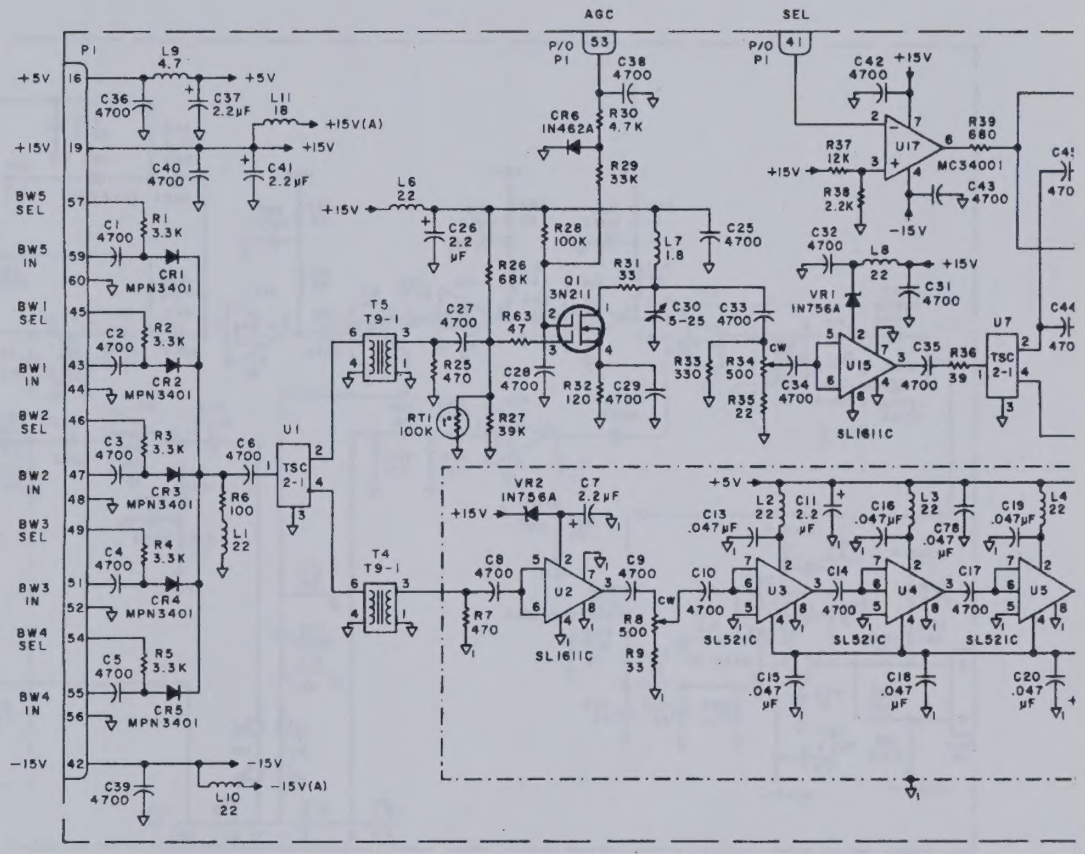


Figure 1-4. Type 798074-2, SSB Bypass (A3A14), Schematic Diagram 281919 (02)



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS IN OHMS, ±5%, 1/8W.
   b) CAPACITANCE IS IN pF.
   c) INDUCTANCE IS IN μH.



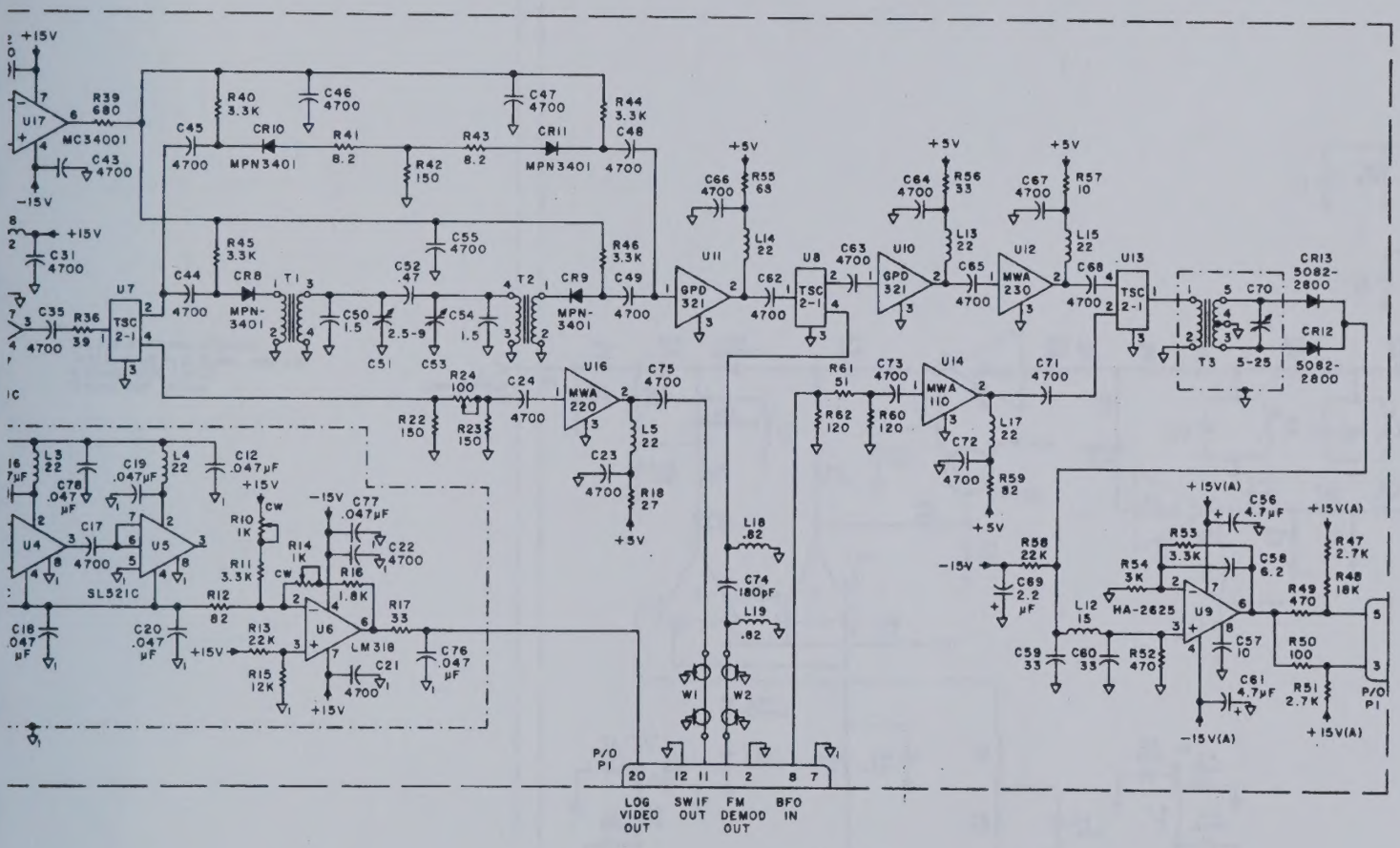
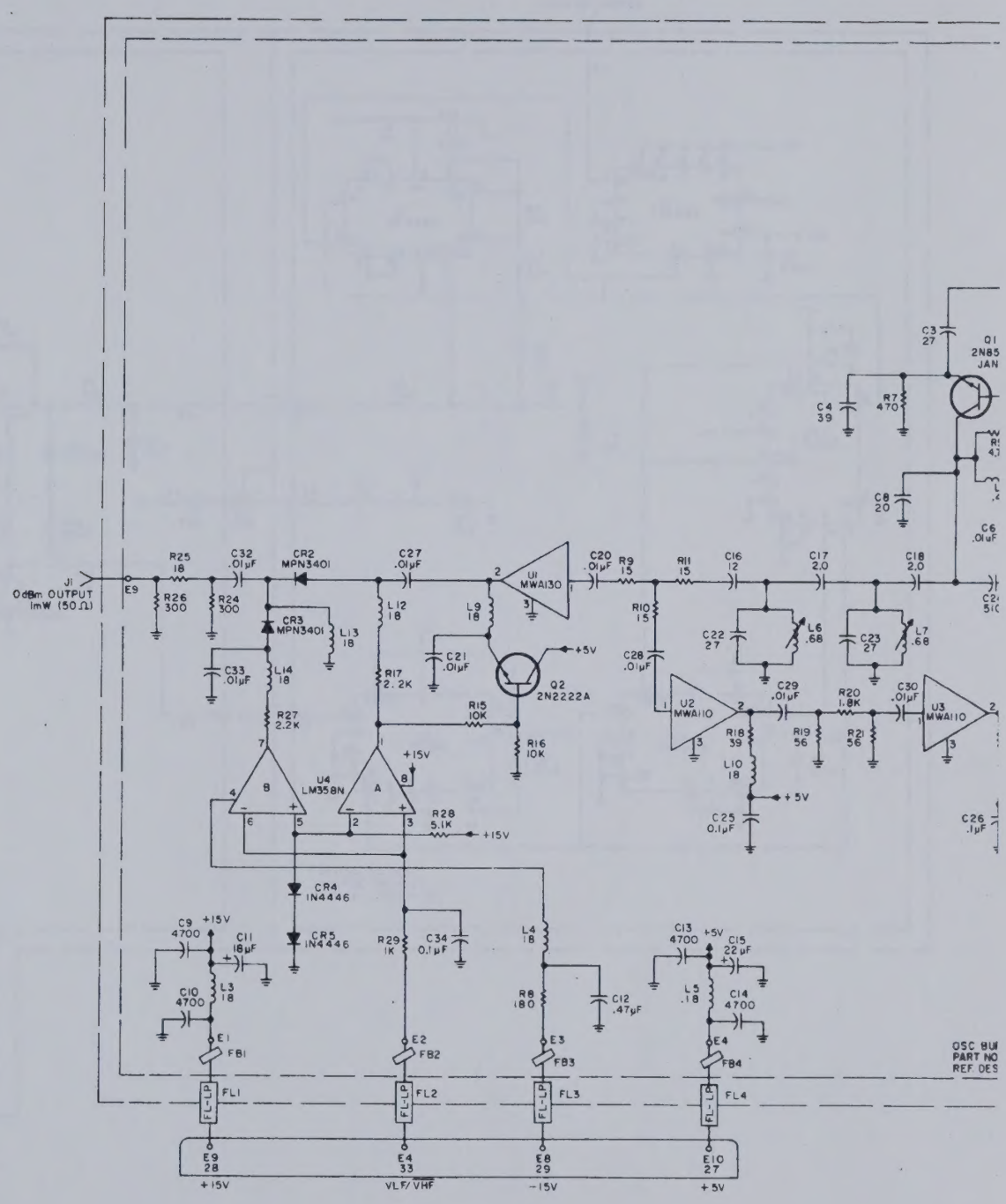


Figure 1-5. Type 726015-1, AM Demodulator/IF Output Amplifier (A3A16), Schematic Diagram 580843 (07)

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS IN OHMS, 1/8W, 5%
   b) CAPACITANCE IS IN pF
   c) INDUCTANCE IS IN μH



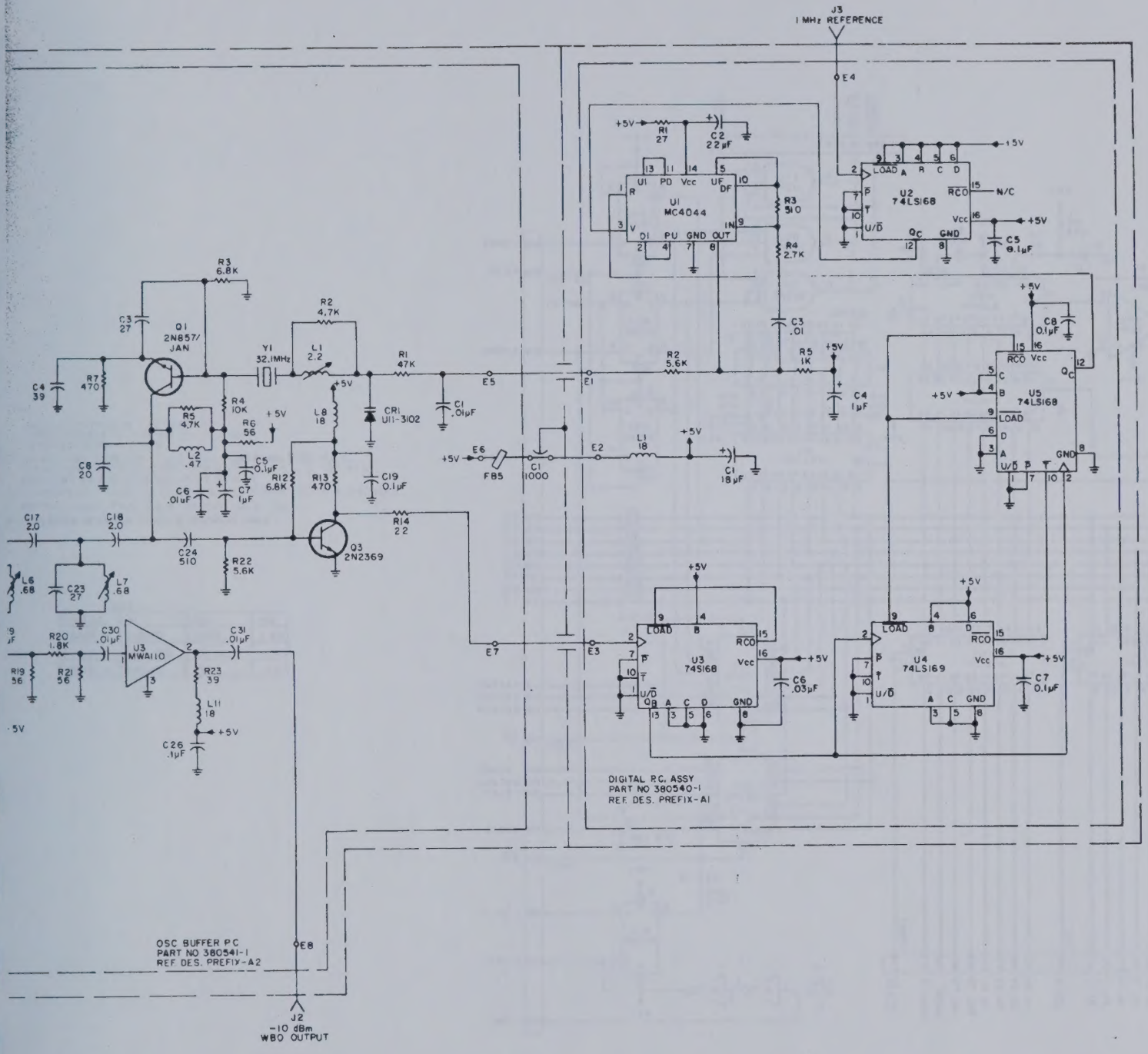


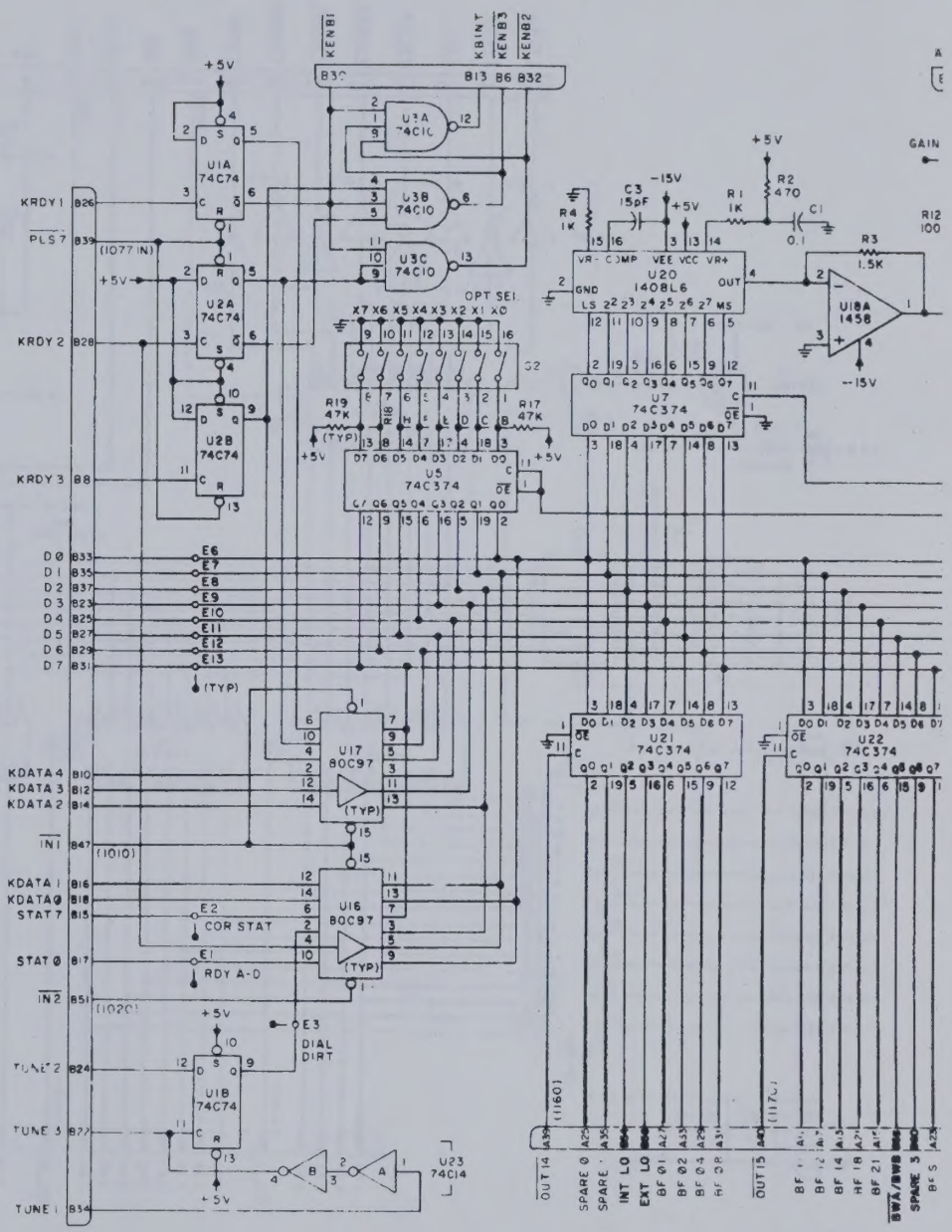
Figure 1-6. Type 776007-1, 32.1 MHz Reference (A3A22), Schematic Diagram 580257 (C)

NOTES

1. UNLESS OTHERWISE SPECIFIED
   a) RESISTANCE IS IN OHMS, ±5%, ¼W
   b) CAPACITANCE IS IN µF
2. Vcc AND GND PINS FOR U1, U2, U3, U13, U14 & U23 PINS 14 & 7; FOR U4, U16, U17, PINS 16 & 8. FOR U5 THRU U11, U15, U21 AND U22, PINS 20 & 10; FOR U12, PINS 28 & 14.
3. NUMBERS IN ( ) ARE HEXIDECIMAL MICROPROCESSOR ADDRESSES
4. NOMINAL VALUE, FINAL VALUE FACTORY SELECTED
5. DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE I.

TABLE I

TYPE NO.	Q1	R13	R8
796321-1	2N2907	100Ω	1.5K
796321-2	NOT USED	NOT USED	1.5K
796321-3	2N2907	100Ω	3K



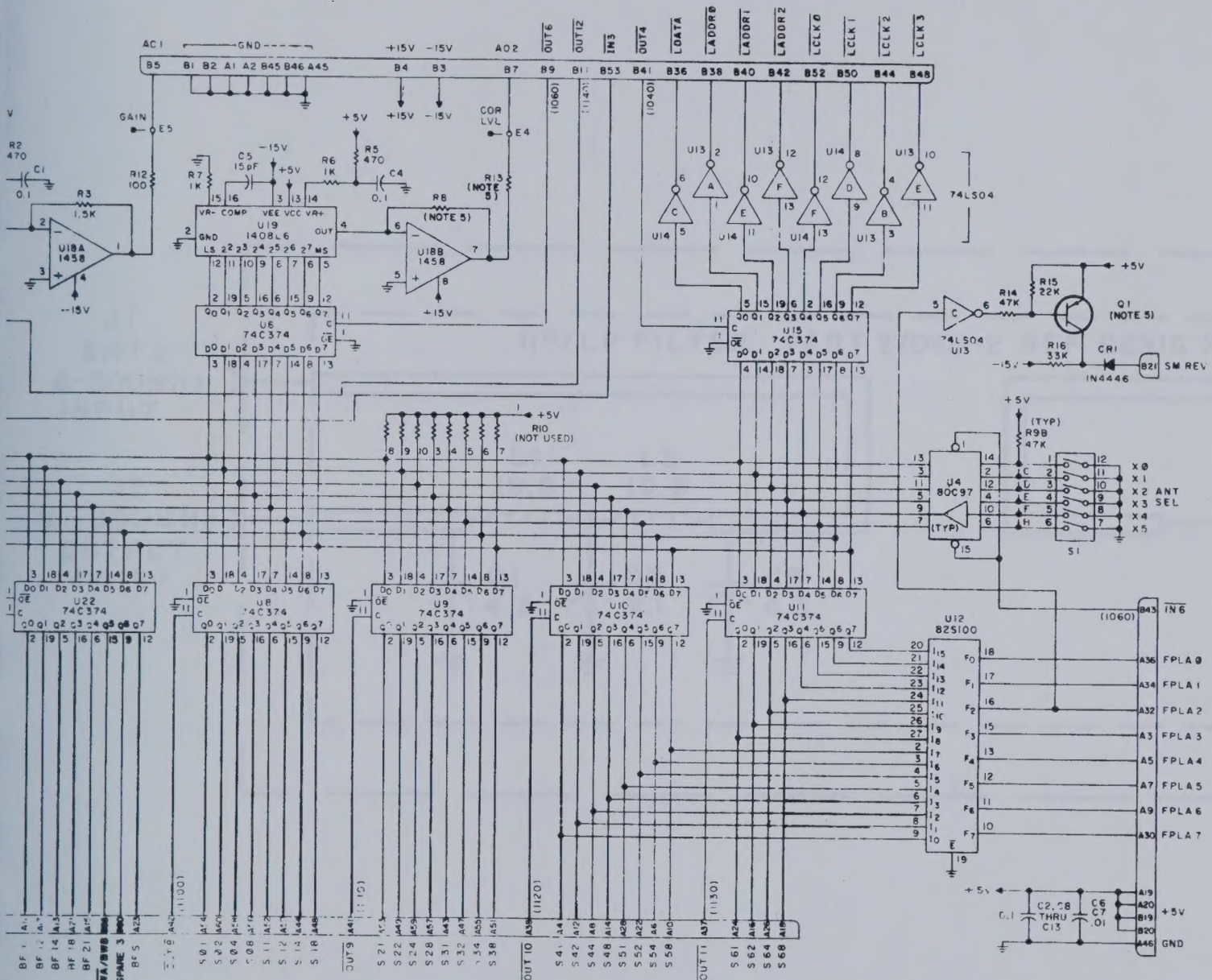
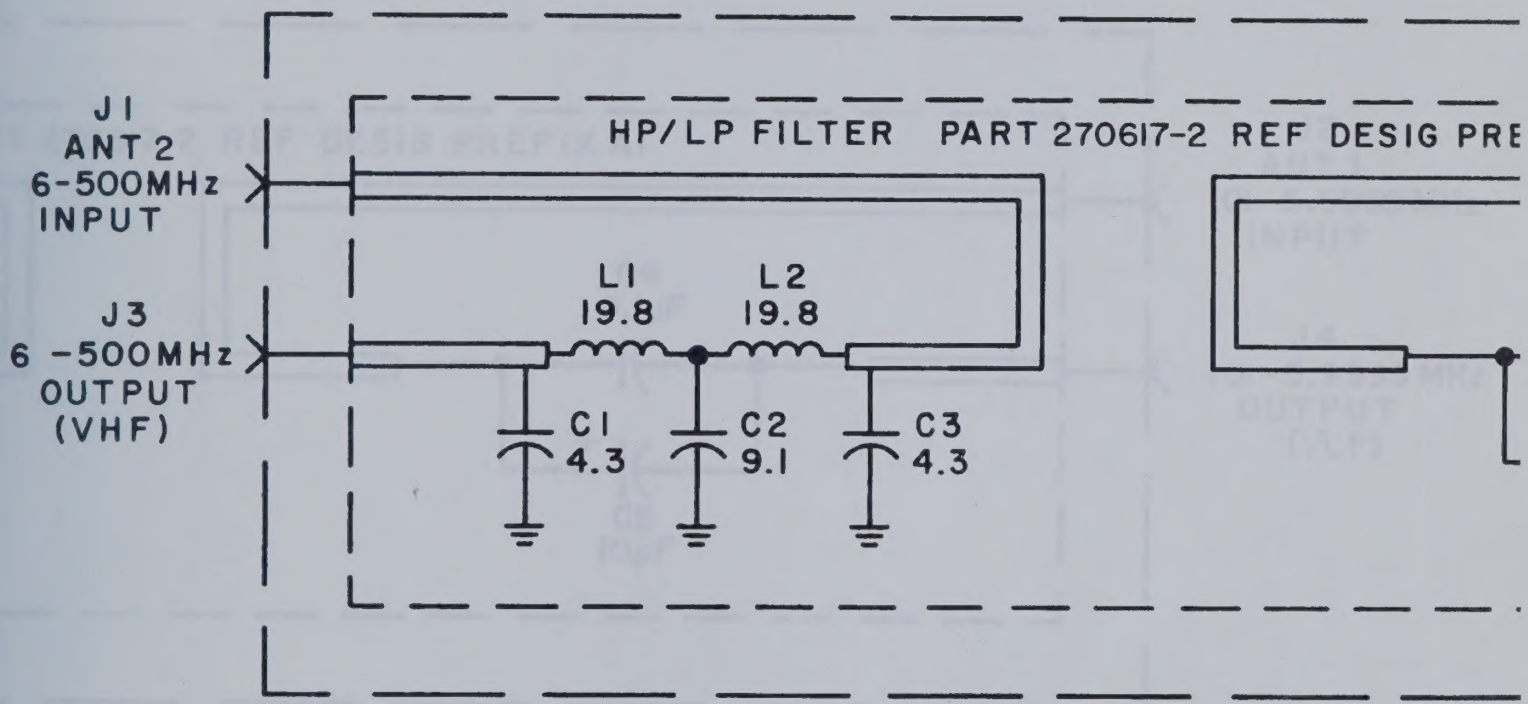
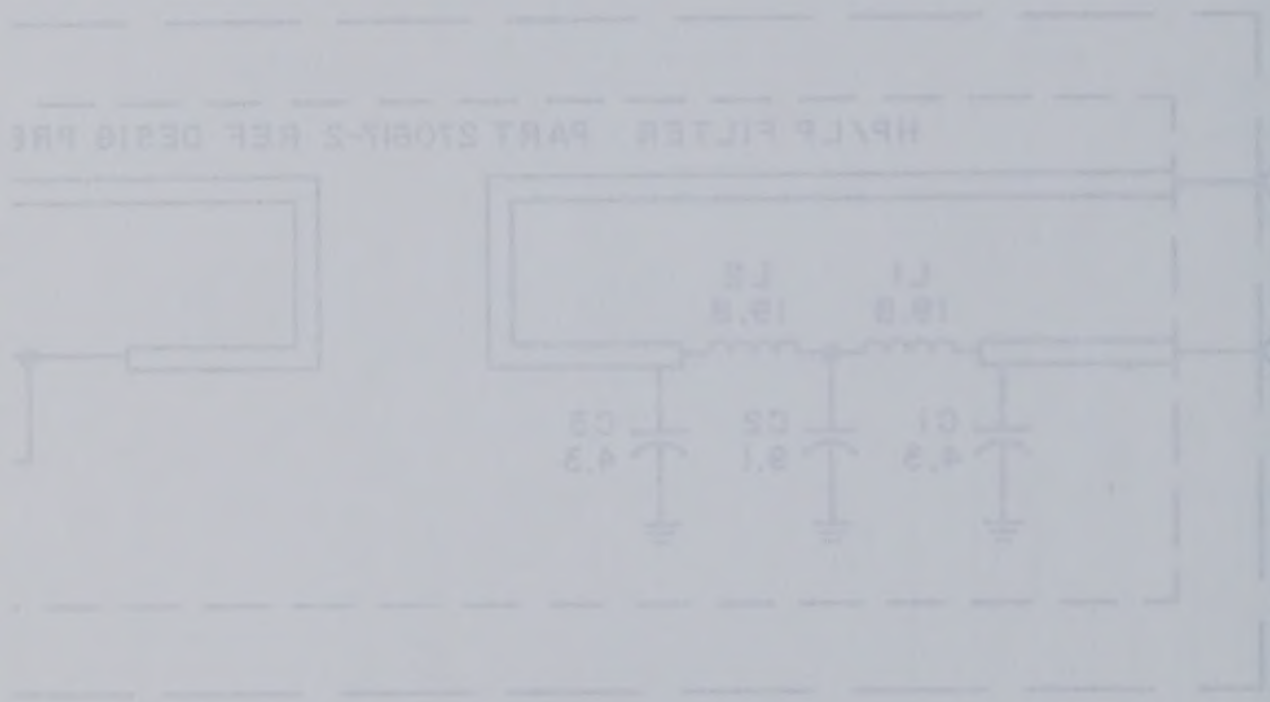


Figure 1-7. Type 796321-2, Synthesizer Interface (A5A2), Schematic Diagram 580212 (D)


J1
ANT 2
6-500MHz
INPUT
J3
6 -500MHz
OUTPUT
(VHF)
HP/LP FILTER PART 270617-2 REF DESIG PRE
L1
19.8
L2
19.8
C1
4.3
C2
9.1
C3
4.3



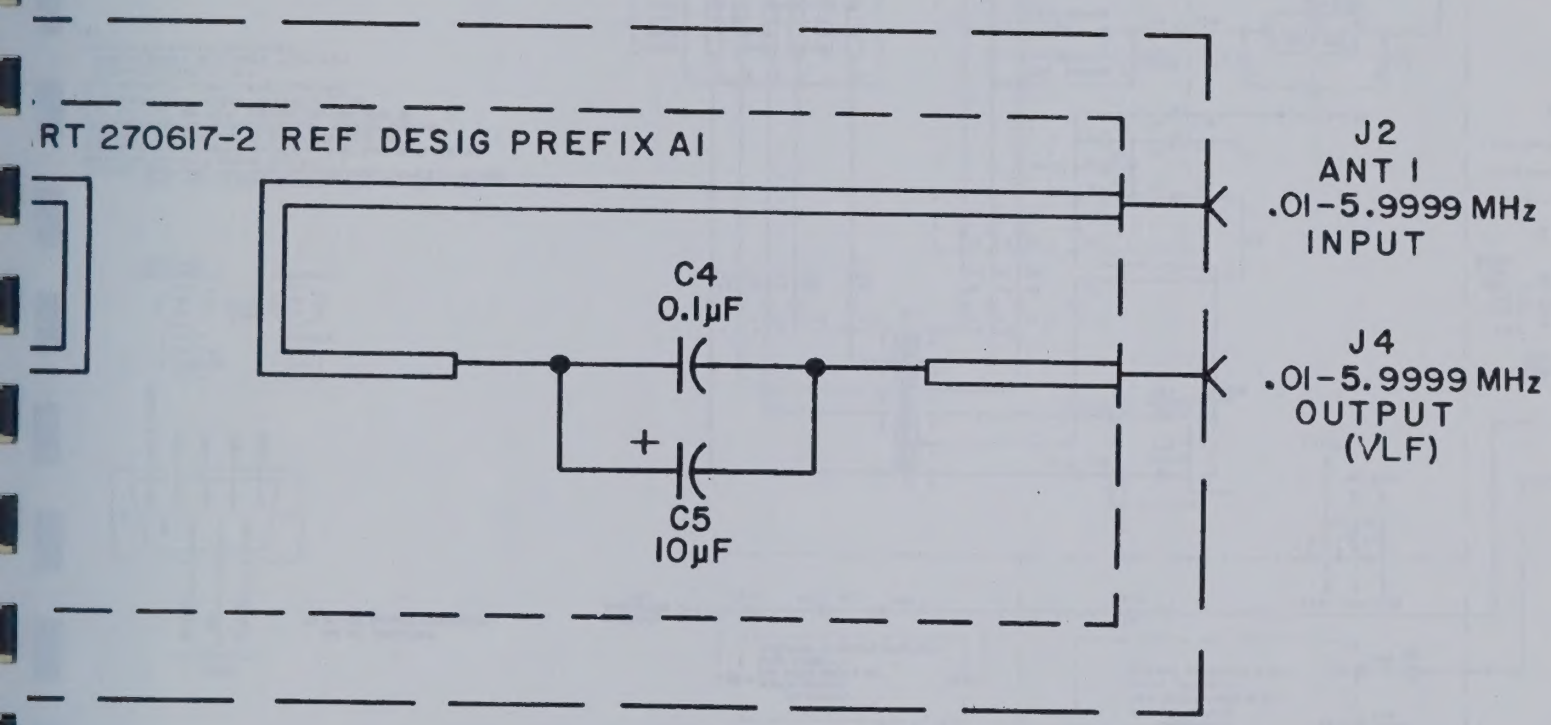
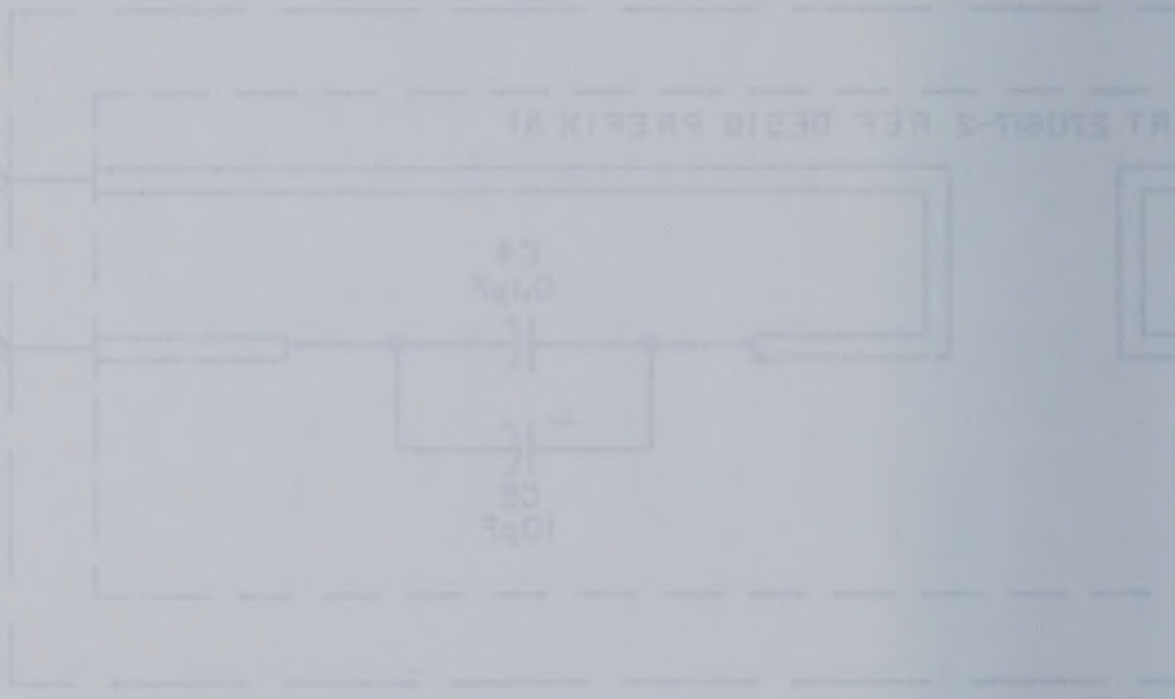
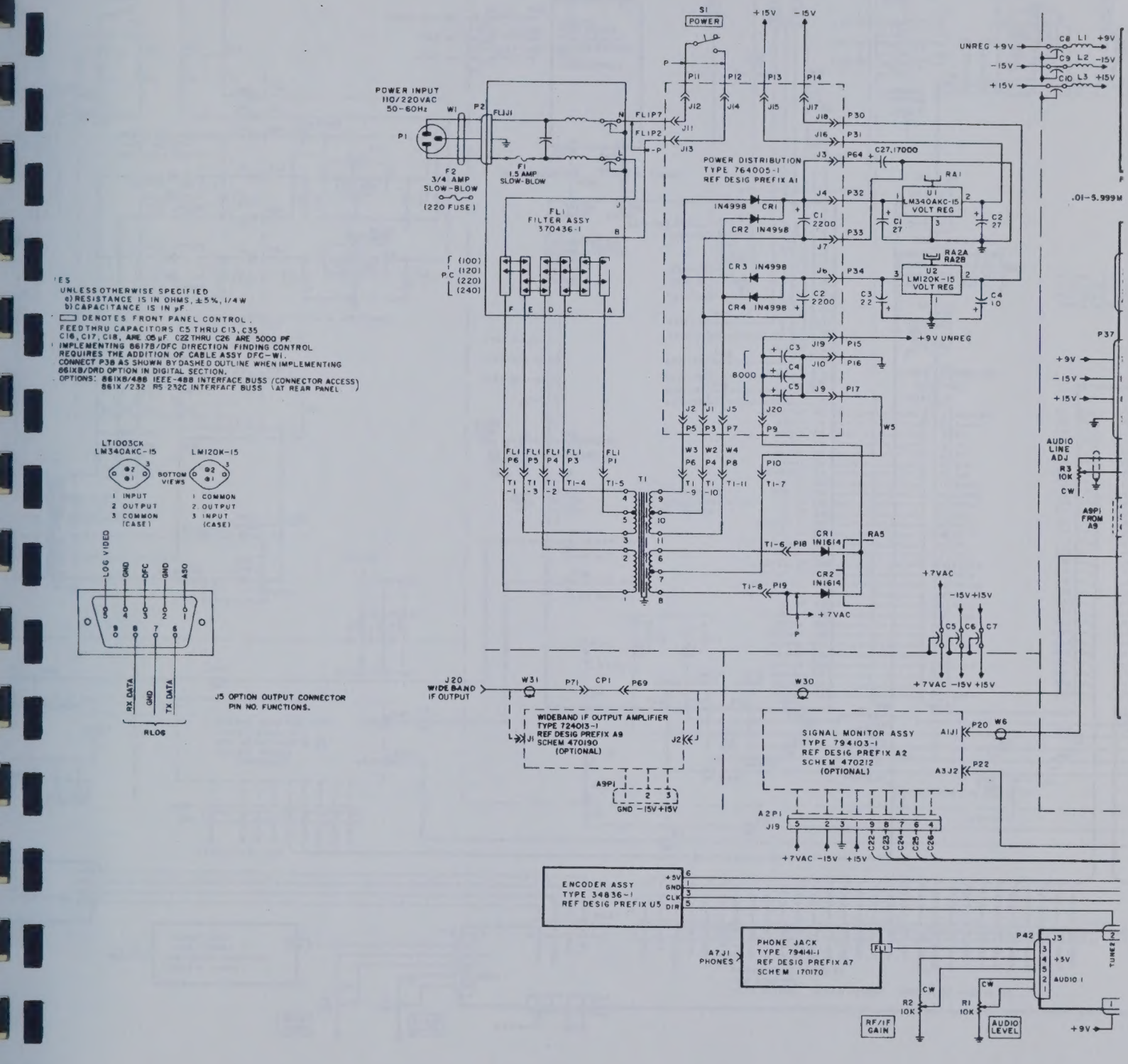


Figure 1-8. Type 794165-2, Antenna Input Filter (A8), Schematic Diagram 280619 (B)





'ES

UNLESS OTHERWISE SPECIFIED
a) RESISTANCE IS IN OHMS, ±5%, 1/4W
b) CAPACITANCE IS IN μF

▭ DENOTES FRONT PANEL CONTROL.

FEEDTHRU CAPACITORS C5 THRU C13, C35
C16, C17, C18, ARE .05 μF C22 THRU C26 ARE 5000 PF
IMPLEMENTING 8617B/DFC DIRECTION FINDING CONTROL
REQUIRES THE ADDITION OF CABLE ASSY DFC-W1.
CONNECT P38 AS SHOWN BY DASHED OUTLINE WHEN IMPLEMENTING
861XB/DRD OPTION IN DIGITAL SECTION.
OPTIONS: 861XB/488 IEEE-488 INTERFACE BUSS (CONNECTOR ACCESS)
861X/232 RS 232C INTERFACE BUSS (AT REAR PANEL)

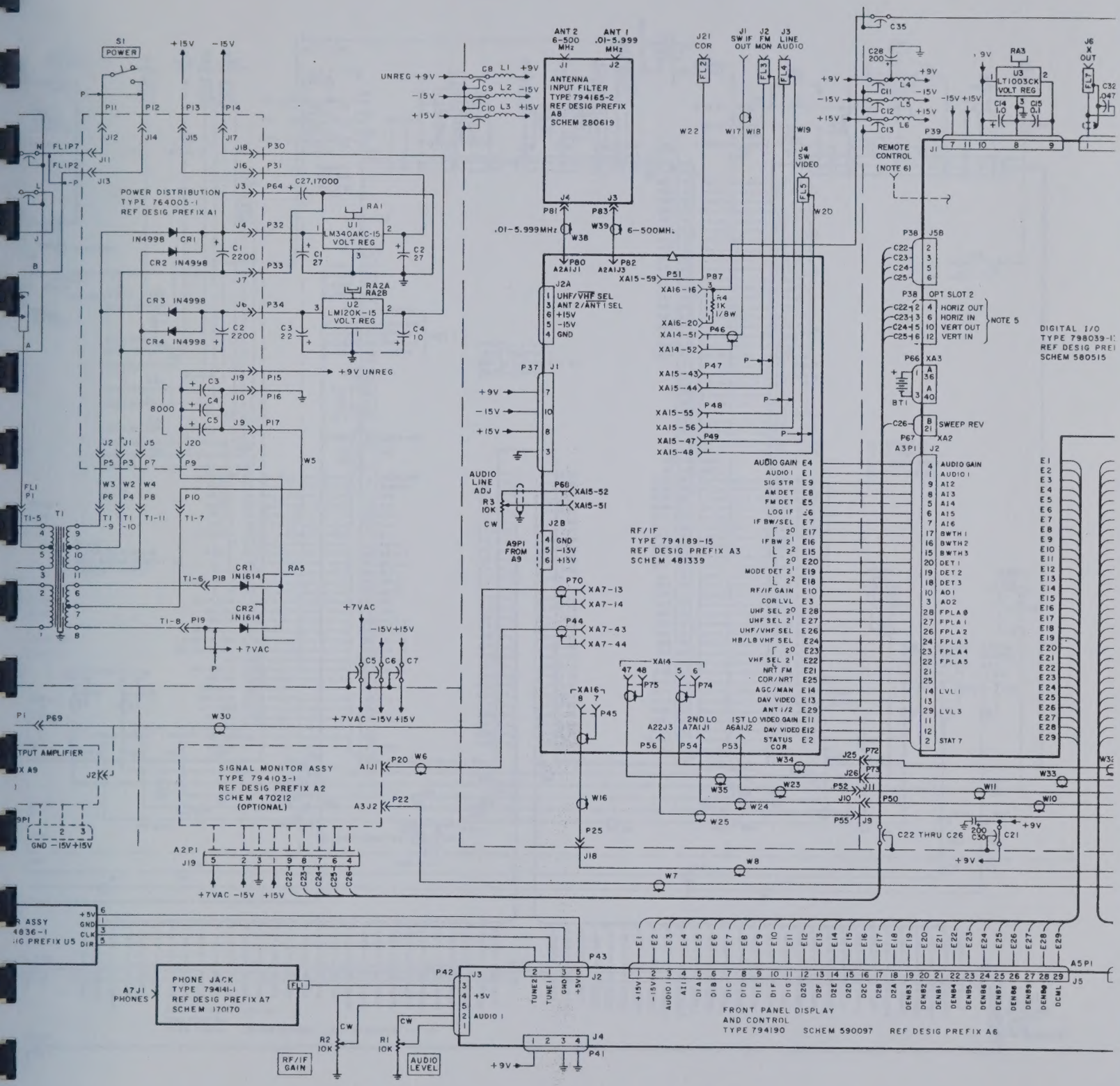


Figure 1-9. Type 1 Schem

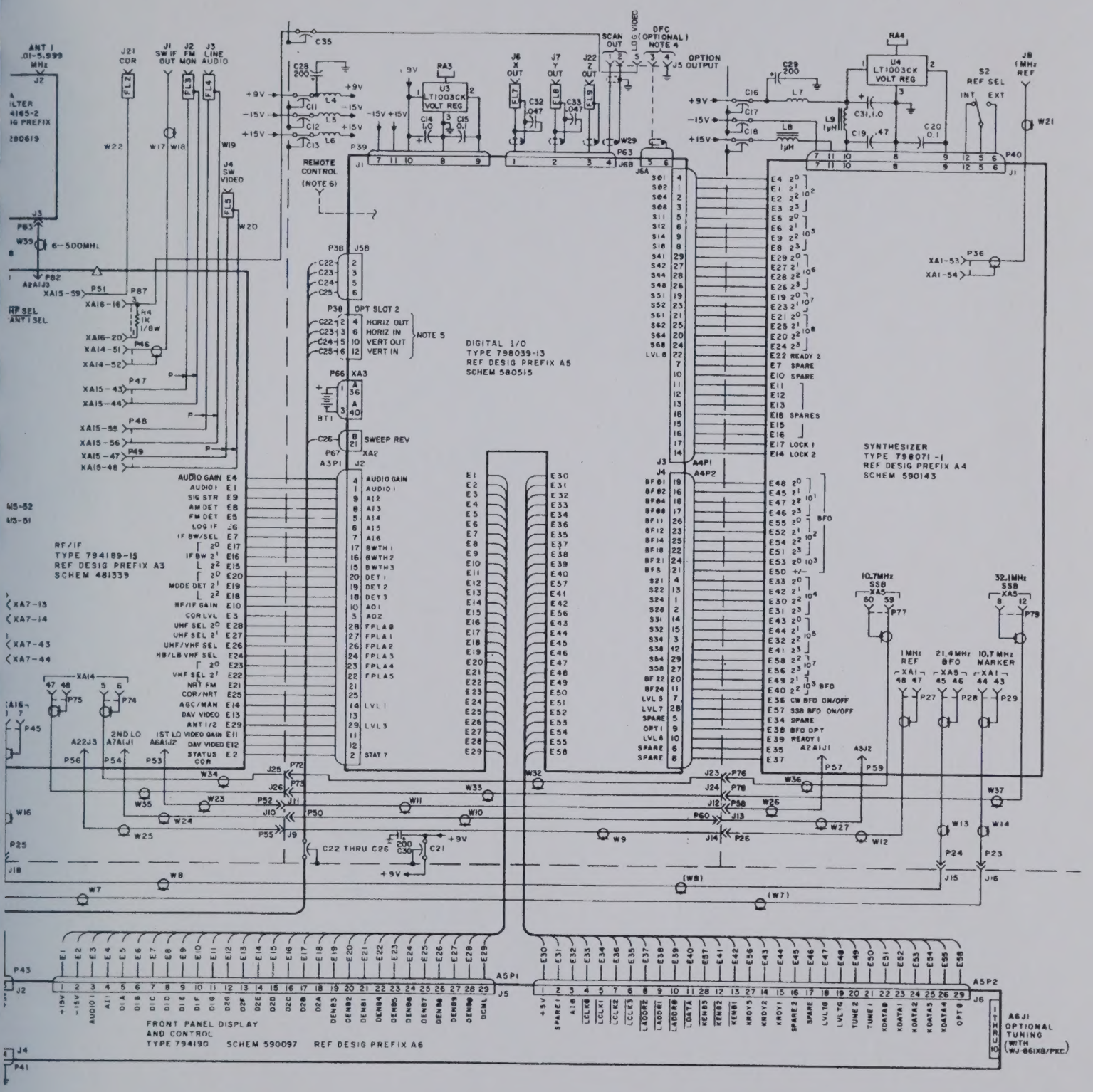
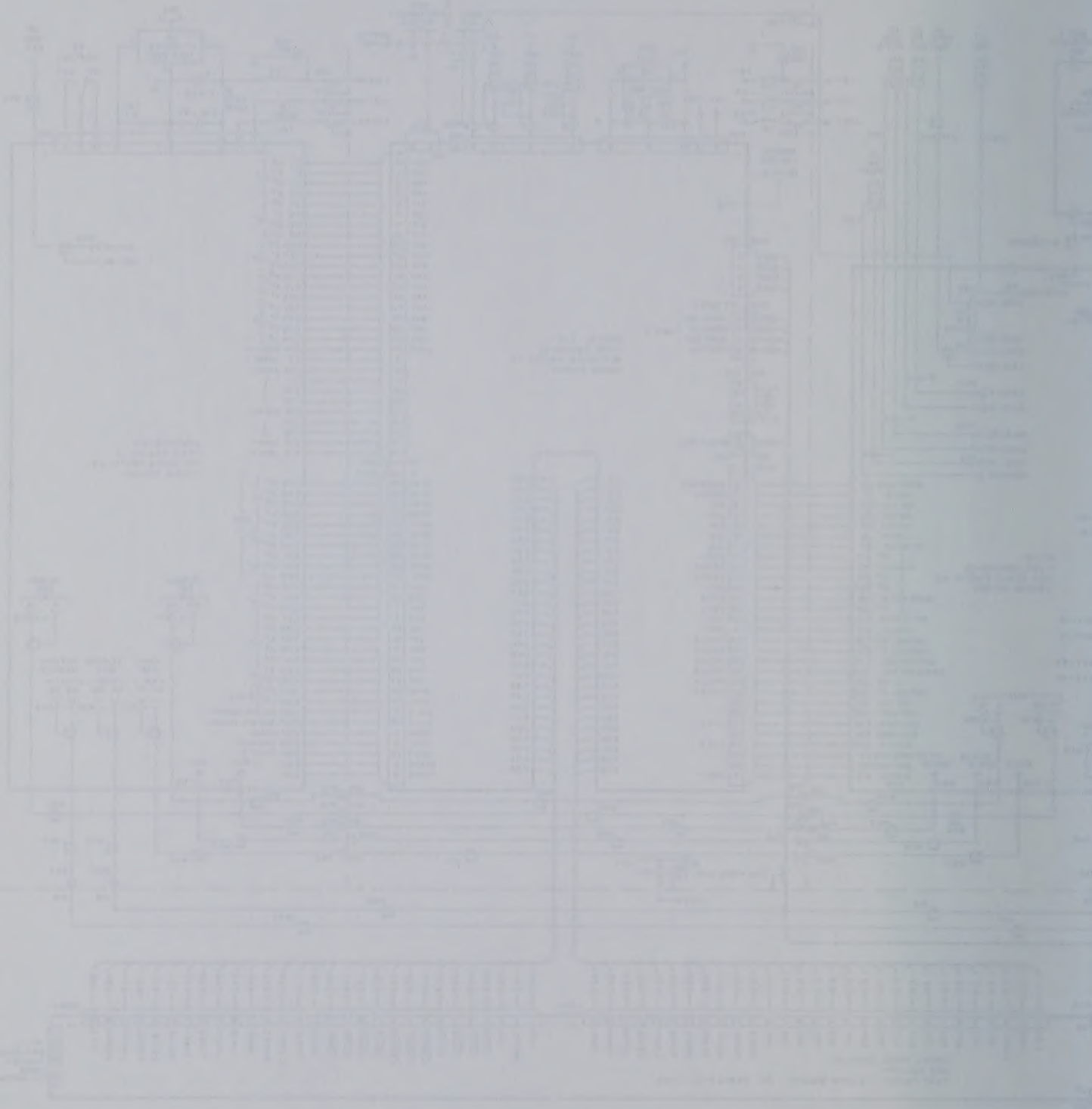



Figure 1-9. Type WJ-8617B-26, VHF/UHF Receiver, Main Chassis Schematic Diagram 680102 (01)